

ORIGINAL



0000163181

BEFORE THE ARIZONA CORPORATI

COMMISSIONERS

SUSAN BITTER SMITH - CHAIRMAN
BOB STUMP
BOB BURNS
DOUG LITTLE
TOM FORESE

RECEIVED
AZ CORP COMMISSION
DOCKET CONTROL

2015 MAY 6 PM 3 54

IN THE MATTER OF THE APPLICATION OF
QUAIL CREEK WATER COMPANY, INC.,
AN ARIZONA CORPORATION, FOR A
DETERMINATION OF THE FAIR VALUE OF
ITS UTILITY PLANT AND PROPERTY AND
FOR INCREASES IN ITS WATER RATES
AND CHARGES FOR UTILITY SERVICES
BASED THEREON.

DOCKET NO. W-02514A-14-0343

**NOTICE OF FILING
STAFF'S DIRECT TESTIMONIES**

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files Direct Testimony of John A. Cassidy, relating to the cost of capital and rate base, operating revenues and expenses and the Direct Testimony of Mike Thompson, relating to engineering evaluations, in the above-referenced docket.

RESPECTFULLY SUBMITTED this 6th day of May, 2015.

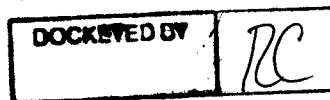
Wesley C. Van Cleve
Brian E. Smith
Attorneys, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

Original and thirteen (13) copies of the foregoing filed this 6th day of May, 2015, with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Arizona Corporation Commission
DOCKETED

MAY 06 2015



1 Copy of the foregoing mailed this
2 6th day of May, 2015, to:

3 Jay L. Shapiro
4 SHAPIRO LAW FIRM, P.C.
5 1819 East Morten Avenue, Suite 280
6 Phoenix, Arizona 85020

7 Steven Soriano
8 Vice President & General Manager
9 QUAIL CREEK WATER COMPANY
10 9532 East Riggs Road
11 Sun Lakes, Arizona 85248

12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

Orig

BEFORE THE ARIZONA CORPORATION COMMISSION

SUSAN BITTER SMITH

Chairman

BOB STUMP

Commissioner

BOB BURNS

Commissioner

DOUG LITTLE

Commissioner

TOM FORESE

Commissioner

IN THE MATTER OF THE APPLICATION OF)
QUAIL CREEK WATER COMPANY, INC., AN)
ARIZONA CORPORATION, FOR A)
DETERMINATION OF THE FAIR VALUE OF)
ITS UTILITY PLANTS AND PROPERTY AND)
FOR INCREASES IN ITS WATER RATES AND)
CHARGES FOR UTILITY SERVICE BASED)
THEREON.)

DOCKET NO. W-02514A-14-0343

DIRECT

TESTIMONY

OF

JOHN A. CASSIDY

PUBLIC UTILITIES ANALYST III

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

MAY 6, 2015

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
BACKGROUND	2
CONSUMER SERVICE	7
COMPLIANCE.....	7
SUMMARY OF PROPOSED REVENUES	7
RATE BASE.....	10
Fair Value Rate Base.....	10
Rate Base Summary	10
Rate Base Adjustment No. 1 – Disallowance of Well 16 Drilling Costs	11
Rate Base Adjustment No. 2 – Capitalized Interest.....	16
Rate Base Adjustment No. 3 – Capitalization of Well 12 New Source Water Testing Costs	17
Rate Base Adjustment No. 4 – Accumulated Depreciation	17
OPERATING INCOME	21
Operating Income Summary.....	21
Operating Income Adjustment No. 1 – Water Testing Expense.....	21
Operating Income Adjustment No. 2 – Transportation Expense	21
Operating Income Adjustment No. 3 – Miscellaneous Expense	22
Operating Income Adjustment No. 4 – Depreciation Expense.....	22
Operating Income Adjustment No. 5 – Property Tax Expense.....	23
Operating Income Adjustment No. 6 – Income Tax Expense	23

SCHEDULES

Revenue Requirement	JAC-1
Gross Revenue Conversion Factor.....	JAC-2
Rate Base – Original Cost	JAC-3
Summary of Original Cost Rate Base Adjustments.....	JAC-4
Rate Base Adjustment No. 1 – Wells & Springs - Disallowance of Well 16 Drilling Costs.....	JAC-5a
Rate Base Adjustment No. 2 – Capitalized Interest	JAC-5b
Rate Base Adjustment No. 3 – Wells & Springs - Capitalization of Well 12 New Source Water Testing Costs	JAC-5c
Rate Base Adjustment No. 4 – Accumulated Depreciation.....	JAC-6
Operating Income Statement – Adjusted Test Year and Staff Recommended.....	JAC-7
Summary of Operating Income Adjustments – Test Year.....	JAC-8
Operating Income Adjustment No. 1 – Contractual Services – Water Testing.....	JAC-9
Operating Income Adjustment No. 2 – Transportation Expense.....	JAC-10
Operating Income Adjustment No. 3 – Miscellaneous Expense.....	JAC-11
Operating Income Adjustment No. 4 – Depreciation Expense	JAC-12
Operating Income Adjustment No. 5 – Property Taxes	JAC-13
Operating Income Adjustment No. 6– Income Tax Expense	JAC-14

ATTACHMENTS

Staff Data Request JAC-2.4	A
Staff Data Request JAC-5.3	B
Staff Data Request JAC-2.5	C

Staff Data Request JAC-5.2 Supplemental Memorandum	D
Staff Data Request JAC-4.1	E
Staff Data Request JAC-2.2	F
Staff Data Request JAC-3.1	G

**EXECUTIVE SUMMARY
QUAIL CREEK WATER COMPANY, INC.
DOCKET NO. W-02514A-14-0343**

Quail Creek Water Company, Inc. ("QCW" or "Company") is an Arizona Class "B" utility engaged in the business of providing potable water service in a portion of Pima County, Arizona, pursuant to certificates of convenience and necessity granted by the Arizona Corporation Commission ("Commission"). In the test-year ended December 31, 2013, Quail Creek served approximately 2,011 customers. The Company's current rates were approved in Decision No. 61611, dated April 1, 1999. QCW's service territory is located in an Active Management Area.

The Company proposes a revenue increase of \$411,785, or 48.75 percent, over adjusted test year revenues of \$844,719, to \$1,256,504. The Company's proposal results in operating income of \$367,886 for a 10.00 percent rate of return on its proposed Original Cost Rate Base ("OCRB") of \$3,678,863.

Staff recommends a \$288,454 or 34.15 percent revenue increase over the adjusted test year revenues of \$844,719 to \$1,133,173. Staff's recommended revenue results in an operating income of \$303,675 for a rate of return of 9.5 percent on Staff's adjusted OCRB of \$3,196,580.

Staff recommends:

1. That the Company be required to achieve a more balanced capital structure prior to the filing of its next rate case; to the extent the Company fails to effectuate a rebalancing of its equity rich capital structure, Staff may recommend that a hypothetical capital structure be used for rate-making purposes.
2. The depreciation rates listed in Table E of the Engineering Report.

1 **INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is John Cassidy. I am a Public Utilities Analyst III employed by the Arizona
4 Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My
5 business address is 1200 West Washington Street, Phoenix, Arizona 85007.
6

7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst III.**

8 A. I am responsible for the examination and verification of financial and statistical information
9 included in utility rate and other applications. In addition, I develop revenue requirements,
10 and prepare written reports, testimonies, and schedules that include Staff recommendations
11 to the Commission. I am also responsible for testifying at formal hearings on these matters.
12

13 **Q. Please describe your educational background and professional experience.**

14 A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of
15 Library Science degree from the University of Arizona, and a Master of Business
16 Administration degree with an emphasis in Finance from Arizona State University. While
17 pursuing my MBA degree, I was inducted into Beta Gamma Sigma, the National Business
18 Honor Society. I have passed the CPA exam, but opted not to pursue certification. I have
19 worked professionally as a librarian, financial consultant and tax auditor and served as Staff's
20 cost of capital witness in rate case evidentiary proceedings in my current as well as in a past
21 tenure as a Commission employee. Since returning to the Commission in January 2012, I
22 have filed cost of capital testimony on behalf of Staff in over 20 rate proceedings, and have
23 filed revenue requirement and rate design testimony on behalf of Staff in three rate
24 proceedings. Additionally, I have attended the Society of Utility Regulatory Financial Analysts
25 ("SURFA") Forum (April 2013), the National Association of Regulatory Utility
26 Commissioners ("NARUC") Utility Rate School (May 2013), and the Institute of Public

1 Utilities at Michigan State University Annual Regulatory Studies Program ("Camp NARUC")
2 (August 2014).
3

4 **Q. What is the scope of your testimony in this case?**

5 A. I am presenting Staff's analysis and recommendations in the areas of rate base, operating
6 revenues and expenses, and cost of capital regarding the Quail Creek Water Company
7 ("QCW" or "Company") application for a permanent rate increase. For convenience, my
8 direct cost of capital testimony and accompanying schedules are being filed under separate
9 cover. I will be filing rate design testimony and schedules on May 13, 2015. Staff witness,
10 Michael Thompson, is presenting Staff's engineering analysis and recommendations.
11

12 **Q. What is the basis of your recommendations?**

13 A. I performed a regulatory audit of the Company's application to determine whether sufficient,
14 relevant, and reliable evidence exists to support the Company's requested rate increase. The
15 regulatory audit consisted of examining and testing the financial information, accounting
16 records, and other supporting documentation and verifying that the accounting principles
17 applied were in accordance with the Commission-adopted NARUC Uniform System of
18 Accounts ("USOA") and Generally Accepted Accounting Principles ("GAAP").
19

20 **BACKGROUND**

21 **Q. Please provide a brief description of QCW and the service it provides.**

22 A. QCW is an Arizona Class "B" utility engaged in the business of providing potable water
23 service in a portion of Pima County, Arizona. During the test year, QCW served
24 approximately 2,011 customers. The Company's current rates were approved by the

1 Commission in Decision No. 61611,¹ dated April 1, 1999, and went into effect as of that date.
2 QCW's service territory is located in an Active Management Area ("AMA").
3

4 **Q. Has QCW experienced significant growth since its last rate filing?**

5 A. Yes. At the time of its last rate case, QCW served fewer than 100 metered customers; today,
6 it serves more than 2,000 metered customers.² As a consequence of this growth, QCW has
7 had to make significant investments in plant to accommodate its current level of customer
8 connections.
9

10 **Q. Please quantify the growth that has occurred in QCW's plant in service since the**
11 **Company's last rate filing.**

12 A. In its last rate filing, QCW used a test year ending December 31, 1997, and as of that date the
13 Company had plant in service of \$981,287. In the instant docket, QCW reports plant in
14 service of \$7,819,192 as of the December 31, 2013 test-year end.
15

16 **Q. When making the additions to plant in service noted above, did QCW pay for and/or**
17 **take title to these plant additions after the date the plant was initially placed into**
18 **service?**

19 A. Yes, in some cases. As noted in the direct testimony filed by Company witness, Mr. Ray
20 Jones:
21

22 "QCW uses an affiliate to manage and finance construction of plant
23 expansion projects on its behalf. Once the projects are complete, QCW
24 purchases the plant from the affiliate at actual cost without markup or

¹ Docket No. W-02514A-98-0655.

² See Soriano Direct, p. 4, lines 12-13.

1 overhead. In some instances these plant purchases were deferred beyond the
2 year in which the facilities were placed into service.”³

3 As presented in Mr. Jones’ direct testimony (see table on p. 10), included in QCW’s plant in
4 service were deferred plant purchases of \$2,600,907.

5
6 **Q. Will you be addressing the timing of these deferred plant purchases later in your**
7 **testimony?**

8 A. Yes.

9
10 **Q. Did QCW rely upon affiliate entities in managing and financing the construction of**
11 **plant expansion projects on behalf of the Company?**

12 A. Yes. The plant management/financing affiliate responsible for the construction of plant
13 expansion projects for QCW is the developer of the Quail Creek community, Robson Ranch
14 Quail Creek, LLC (“RRQC”).⁴

15
16 **Q. Who owns QCW?**

17 A. QCW is owned by a group of seven shareholders, six of which are organized in the legal form
18 of a trust.⁵

19
20 **Q. Is QCW affiliated with other business entities?**

21 A. Yes. QCW is affiliated with a number of different business entities, some of which are water
22 and wastewater utilities regulated by the Commission, and others which are non-regulated.

23

³ See Jones Direct, p. 9, lines 19-23.

⁴ In response to Staff data request JAC 2-1, QCW indicated that all of the plant used and useful in the provision of water service by QCW was built by its affiliate, RRQC.

⁵ See Soriano Direct, Exhibit SS-DT1. As shown in Exhibit SS-DT1, these six trusts are held in the names of individual members of the Robson family, and account for 99.0 percent of the ownership interest in QCW common equity.

1 **Q. Please identify QCW's water and wastewater utility affiliates which are subject to**
2 **regulation by the Commission.**

3 A. As presented in the direct testimony filed by Company witness, Mr. Steven Soriano,⁶ QCW's
4 regulated sister utilities include:

5 Ridgeview Utility Company
6 SaddleBrooke Utility Company
7 Lago Del Oro Water Company
8 Picacho Water Company
9 Picacho Sewer Company
10 Pima Utility Company
11 Mountain Pass Utility Company
12 Santa Rosa Water Company
13 Santa Rosa Utility Company
14

15 **Q. Please identify QCW's non-regulated affiliates, and briefly describe the relationship**
16 **QCW has with each.**

17 A. In response to Staff data request JAC 1-12, QCW identified the following five non-regulated
18 affiliates:

19 <u>Affiliate</u>	<u>Type of Company</u>
20 Robson Ranch Quail Creek, LLC	Real Estate Developer
21 Robson Ranch Arizona Construction Co.	Construction Contractor
22 Quail Creek CC Property Owners Assoc.	Home Owner's Association
23 Robson Communities, Inc.	Accounting Services
24 B & R Engineering, Inc.	Civil Engineering
25	

⁶ *Ibid.*, p. 2.

1 As regards the affiliate relationship QCW has with each, they are as follows: as noted earlier,
2 RRQC is the developer of the Quail Creek community, and both manages and finances plant
3 expansion projects on behalf of QCW; Robson Ranch Arizona Construction Co. ("RRAC")
4 is the construction contractor for the Quail Creek community; Quail Creek CC Property
5 Owners Assoc. ("QCHOA") is the homeowners association for the Quail Creek community;
6 Robson Communities, Inc. ("RCI") provides accounting, HR, IT, and other support services
7 to each of the regulated affiliate companies, including payroll, banking and other
8 administrative support; and B & R Engineering, Inc. ("B&R") is the civil engineering firm of
9 record for the Quail Creek development, and has provided services to the developer of the
10 Quail Creek community (i.e., RRQC) for over 15 years.

11
12 **Q. Is the Quail Creek community the only development QCW serves within its**
13 **certificated service territory?**

14 A. No. QCW provides water service to customers in the Quail Creek and Stone House
15 community developments, both of which are located in the Town of Sahuarita, Arizona in
16 Pima County. As noted, RRQC is the developer of the Quail Creek community. The Stone
17 House community is being developed by Stone House Development, Inc., a 50/50 joint
18 venture between Diamond Ventures, Inc. ("DVI") and Robson. The Stone House
19 development is both managed and operated by DVI.⁷

20
21 **Q. What test year did QCW use in this filing?**

22 A. QCW's test year is based on the twelve months ended December 31, 2013.
23

⁷ See Soriano Direct, p. 1, lines 17-23.

CONSUMER SERVICE

Q. Please provide a brief history of customer complaints received by the Commission regarding QCW.

A. A Staff search of the Consumer Services database reveals the following from January 1, 2012 through April 2, 2015:

- **2015** – Eight opinions opposed to the rate case
- **2014** – No complaints
- **2013** – No complaints
- **2012** – No complaints

COMPLIANCE

Q. Please provide a summary of the ACC compliance status of QCW.

A. A check of the Compliance database indicates that as of April 3, 2015, there are currently no delinquencies for QCW. Thus, the Company is currently, “in compliance.”

SUMMARY OF PROPOSED REVENUES

Q. Please summarize the Company’s filing.

A. The Company proposes a \$411,785, or 48.75 percent, revenue increase from \$844,719 to \$1,256,504. The proposed revenue increase would produce an operating income of \$367,886 for a 10.00 percent rate of return on an original cost rate base (“OCRB”) of \$3,678,863. The Company’s proposed rates would increase the typical residential 5/8 x 3/4-inch meter bill with an average usage of 5,725 gallons from \$31.03 to \$43.63, for an increase of \$12.60 or 40.62 percent.

1 **Q. Please summarize Staff's recommended revenue.**

2 A. Staff recommends a \$288,454, or 34.15 percent, revenue increase from \$844,719 to
3 \$1,133,173. Staff's recommended revenue increase would produce an operating income of
4 \$303,675 for a 9.50 percent rate of return on a Staff adjusted OCRB of \$3,196,580 as shown
5 on Schedule JAC-1. The effect on the typical residential bill will be provided in my rate
6 design testimony.

7
8 **Q. Please summarize Staff's rate base and operating income adjustments for QCW.**

9 A. Staff's testimony discusses the following adjustments:
10

11 **Rate Base Adjustments**

12 Wells & Springs (NARUC Acct. 307) – This adjustment decreases rate base by a net of
13 \$249,432 to reflect a disallowance/reversing entry of the Well 16 drilling costs which the
14 Company transferred to the Well 12 plant account in 2009. Staff's net \$249,432 adjustment
15 represents the carrying value of the Well 16 drilling costs of \$251,984, less a \$2,552 capitalized
16 interest cost component allocated to Well 16 in 2009 ($\$251,984 - \$2,552 = \$249,432$).

17
18 Wells & Springs (NARUC Acct. 307)⁸ – This adjustment decreases rate base by \$9 to reflect
19 the removal of capitalized interest allocated to the cost of Well 11 in 2002.

20
21 Wells & Springs (NARUC Acct. 307) – This adjustment increases rate base by \$4,013 to
22 reflect the reclassification of a one-time Well 12 new source water testing expense in 2013 as
23 a capital expenditure (see Staff Engineering Report).
24

⁸ Although this may seem like a minor adjustment, it is a portion of a larger, single adjustment explained on page 18 of my testimony.

1 Structures & Improvements (NARUC Acct. 304)⁹ – This adjustment decreases rate base by
2 \$18 to reflect the removal of capitalized interest allocated to the cost of Well 11 in 2002.

3
4 Electric Pumping Equipment (NARUC Acct. 311)¹⁰ – This adjustment decreases rate base by
5 \$173 to reflect the removal of \$173 of capitalized interest allocated to the cost of Well 11 in
6 2002.

7
8 Accumulated Depreciation – This adjustment decreases rate base by \$234,113 to reflect the
9 impact of Staff's recalculation of accumulated depreciation based on Staff adjustments to rate
10 base.

11
12 **Operating Income Adjustments**

13 Water Testing Expense – The adjustment decreases annual water testing expense by \$5,256 to
14 reflect an appropriate cost level for the Monitoring Assistant Program ("MAP") and other
15 water testing expenses on a going-forward basis (see Staff Engineering Report).

16
17 Transportation Expense – The adjustment decreases annual transportation expense by \$2,136
18 to reflect the personal commute mileage for a vehicle driven by a Company employee.

19 Miscellaneous Expense – The adjustment decreases annual miscellaneous expense by \$4,787
20 to reflect a reclassification of MAP water testing expenses which the Company improperly
21 accounted for as miscellaneous expense.

22
23 Depreciation Expense – This adjustment decreases annual depreciation expense by \$8,279 to
24 reflect Staff's calculation of depreciation expense using Staff's recommended depreciation

⁹ Although this may seem like a minor adjustment, it is a portion of a larger, single adjustment explained on page 18 of my testimony.

¹⁰ Although this may seem like a minor adjustment, it is a portion of a larger, single adjustment explained on page 18 of my testimony.

1 rates and Staff's recommended plant and Contributions in Aid of Construction ("CIAC")
2 balances.

3
4 Property Tax Expense – This adjustment decreases property tax expense by \$2,432 to reflect
5 Staff's calculation of the Company's property tax expense.

6
7 Income Tax Expense – This adjustment increases income tax expenses by \$9,611 to reflect
8 the income tax calculation on Staff's adjusted test year operating income.

9
10 **RATE BASE**

11 *Fair Value Rate Base*

12 **Q. Did QCW prepare schedules showing the elements of Reconstruction Cost New Rate**
13 **Base?**

14 A. No, it did not. The Company's filing requests that QCW's OCRB be used as its fair value
15 rate base ("FVRB").¹¹

16
17 *Rate Base Summary*

18 **Q. Please summarize Staff's rate base recommendation.**

19 A. Staff recommends a rate base of \$3,196,580 for QCW, a decrease of \$482,283 from the
20 Company's proposed \$3,678,863 rate base. Staff's recommendation results from the four rate
21 base adjustments below.

22

¹¹ See Bourassa Direct, p. 5, lines 21-22.

Rate Base Adjustment No. 1 – Disallowance of Well 16 Drilling Costs

Q. As noted earlier, QCW acquired much of its plant on a deferral basis from its non-regulated affiliate, RRQC. Is the Well 16 project included among QCW's deferred plant purchases in this proceeding?

A. Yes. As shown in the table on page 10 of Mr. Jones' direct testimony, QCW allegedly placed Well 16 into service in 2009, but purchase of the asset from the RRQC non-regulated affiliate was deferred until 2011. At that time, QWC paid RROC \$510,205 for well 16. Of this total, \$251,984 represented the costs associated with the drilling of Well 16 and charged to NARUC Plant Account 307 (Wells & Springs), while \$258,221 were costs charged to NARUC Plant Account 311 (Pumping Equipment) ($\$251,984 + \$258,221 = \$510,205$).

Q. Mr. Cassidy, is there a question as to whether Well 16 was ever placed into service back in 2009 from an operational standpoint?

A. Yes. In response to Staff Data Request JAC 2-4, the Company indicated that Well 16 was in service during the months of September and October of 2009 but that this was while test pumping was being conducted. By the end of this two month testing period, it was determined that Well 16 was unsuitable for potable uses and the Well was taken out of service in October 2009. The Company considered Well 16 to be "in-service" during this two month period because it was pumping water into the QWC water system during this testing period. Even though QWC made a management decision to actually pump water from Well 16 into the water system serving customers during the September – October 2009 time frame, the water from this Well contained excessive amounts of sand; therefore, was not operationally useful.

1 **Q. Mr. Cassidy, was there a written agreement signed between QCW and RRQC related**
2 **to the development of Well 16?**

3 A. No. In response to Staff Data Request JAC 4-1, the Company acknowledged that there was
4 no written contract between QCW and RRQC related to the development of this Well. Also
5 the Company indicated that there were no written memoranda exchanged between QCW and
6 RRQC between the date the Well 16 project was initiated and when the project was
7 abandoned after incurring a total cost of \$510,205.

8
9 **Q. At the time QCW purchased Well 16 from its non-regulated affiliate, RRQC, in 2011,**
10 **did Company Management know that Well 16 was nonproductive/unsuitable as a**
11 **source of potable water?**

12 A. Yes. Pursuant to information provided in the Company's response to Staff Data Request
13 JAC 2-4, Well 16 was placed into service during the month of September 2009, but taken out
14 of service in October 2009 after testing definitively determined the well to be
15 nonproductive/unsuitable as a source of potable water. Further, the Company acknowledged
16 that it was aware of a similar determination being made regarding Well 16 back in late 2006 or
17 early 2007.

18
19 **Q. Does Staff believe that the absence of a written agreement between QWC and RRQC**
20 **related to the development of Well 16 should be of concern to the Commission?**

21 A. Yes. Affiliate transactions in general require extra scrutiny because of the tendency to be self
22 serving as noted within Section D, Affiliate Transactions (Not Tariffed), of the NARUC
23 Guidelines for Cost Allocations and Affiliate Transactions. The absence of a written contract
24 in this instance, where a payment of \$510,205 was made to an affiliate for an asset that the
25 regulated utility knew would never be used or useful alarming.

26

1 Written contracts provide safeguards, limit risks and clarify the understanding of the signing
2 parties as to the the contract deliverables. It is clear to Staff that, absent the existing affiliate
3 relationship, it would be logical and reasonable for management to insist upon a signed
4 written contract when retaining the services of an independent third party to design and
5 complete major construction projects and/or to provide on-going operational services.

6
7 Staff recommends that, on a going forward basis, the Commission should direct QWC to
8 seek competitive bids, and enter into written contracts, for all capital projects that exceed
9 \$100,000.

10
11 **Q. When was the purchase of Well 16 recorded on QCW's books?**

12 A. In response to Staff data request JAC 5-3, QCW indicated that the Well 16 assets purchased
13 from its non-regulated affiliate, RRQC, were booked on December 19, 2011, which
14 corresponds to the date a check was issued to RRQC by QCW for payment of the Well 16
15 project costs.¹²

16
17 **Q. Mr. Cassidy, do the records at the Arizona Department of Water Resources**
18 **("ADWR") support the Company's statement?**

19 A. No. Staff found that the records at ADWR continue to show Well 16 being owned by
20 RRQC as of the date of the filing of my testimony.¹³

21

¹² The above referenced check was made out to RRQC in the amount of \$2,724,580, and represented payment for the following plant assets: Unit 23 Water (\$184,133); Unit 15 Water (\$221,062); Unit 24 Water (\$174,844); 2nd Water Tank – Remainder Purchase (\$776,457); McGibbon Parcel – Water (\$90,390); Acquifer Protection Permit (\$76,664); Well 16 (\$510,205); and Well 12 (\$690,825).

¹³ As of April 23, 2015, a check of the Arizona Department of Water Resources ("ADWR") well registry web site reported the owner of record for Well 16 (ADWR Well No. 55-608598) to be RRQC.
<https://gisweb.azwater.gov/WellRegistry/SearchWellReg.aspx>

1 **Q. Did QCW initially retire the entire balance (i.e., \$510,205) of nonproductive Well 16**
2 **project costs?**

3 A. Yes, as evidenced by the statement made by Mr. Jones in direct testimony and in response to
4 Staff Data Request JAC 5-3, QCW indicated that the \$510,205 outlay in Well 16 costs was
5 retired on 2/28/2013.¹⁴

6
7 **Q. For purposes of its pending rate filing, did QCW make an adjustment reversing the**
8 **\$251,984 retirement of Well 16 drilling costs?**

9 A. Yes.

10
11 **Q. Has Staff confirmed the existence of the NARUC accounting guidance cited by Mr.**
12 **Jones and the Company?**

13 A. Yes. Within the NARUC description of the costs that can be recorded as part of a USoA
14 account 307 Wells and Springs asset, the guidance does indicate that the costs to be
15 capitalized can include the cost of nonproductive wells drilled as a part of a project resulting
16 in a source of water within the same supply area.

17
18 **Q. In light of the above acknowledgement, why did Staff make an adjustment to again**
19 **remove the \$251,984 in drilling costs that QCW transferred to Well 12?**

20 A. For two reasons. First, the NARUC accounting treatment to which Mr. Jones cites has
21 relevance only to regulated utilities, and not to their non-regulated developer affiliates. QCW,
22 the regulated entity subject to the NARUC guidance, paid for/assumed ownership of Well
23 16 two years *after* the well was known to be nonproductive. Staff does not believe that such
24 guidance should be applied after the fact to capital projects undertaken years earlier by an
25 unregulated affiliate. Second, Staff believes the controlling accounting treatment is found in

¹⁴ See Jones Direct, p. 8, lines 7-8.

1 the NARUC Guidelines for Cost Allocations and Affiliate Transactions. Specifically, Section
2 D of the Guidelines deals with Affiliate Transactions (Not Tariffed), and rule 3 of that
3 Section dealing with the transfer of capital assets between a regulated utility and its non-
4 regulated affiliate. Within those Affiliate Transaction Guidelines, assets sold to a regulated
5 utility by a non-regulated affiliate are to be transferred at the lower of cost or market value
6 (actual wording in the Guidelines reads "at the lower of prevailing market price or net book
7 value"). So, regardless of the fact that QCW was apparently willing to pay its non-regulated
8 affiliate \$510,205 for the purchase of a non productive well that could not be used in
9 providing service to customers, Staff believes the value of this asset at the time it was sold to
10 QWC should be considered to be zero.

11
12 **Q. Pursuant to the NARUC Guidelines for Cost Allocations and Affiliate Transactions**
13 **("NARUC Guidelines"), is it acceptable for a non-regulated affiliate to transfer capital**
14 **assets to a regulated utility at cost when that cost exceeds real value of a well that is**
15 **not used and useful?**

16 **A.** No, it is not.

17
18 **Q. What is Staff's recommendation?**

19 **A.** Staff recommends that the Well 16 drillings costs be disallowed, in order to conform with the
20 NARUC Guidelines that affiliate transfers of assets between non-regulated affiliates and the
21 subject utility be made at the lower of cost or the value of a non productive well that is not
22 used and useful in providing service. As shown in Schedule JAC-4, Staff's adjustment will
23 reduce rate base by a net amount of \$249,432, a figure representing the actual \$251,984
24 transfer cost, net of capitalized interest of \$2,552.

25

Rate Base Adjustment No. 2 – Capitalized Interest

Q. Why did Staff make an adjustment for capitalized interest?

A. Pursuant to information provided in response to Staff data request JAC 1-3, Staff learned that capitalized interest of \$5,167 had been allocated to the cost of Well 16 in 2009. Of this total, \$2,552 was allocated to Wells & Springs (NARUC Acct. 307) and \$2,615 was allocated Electric Pumping Equipment (NARUC Acct. 311). Because QCW's capital structure contains no debt, Staff issued data request JAC 3-1 asking the Company to explain this interest cost allocation. In response, QCW stated that the capitalized interest allocation was improper and contrary to established practices,¹⁵ and that the Company would make an adjustment to remove the capitalized interest when filing rebuttal testimony. Staff's adjustment was made in view of the Company's acknowledgement that the allocation of capitalized interest to plant was improper.

Q. When making an adjustment for the capitalized interest allocated to Well 16, did Staff make an adjustment for the entire \$5,167 amount of capitalized interest?

A. No. Staff's adjustment was confined only to the \$2,552 amount of capitalized interest allocated to Wells & Springs (NARUC Acct. 307) in 2009. Staff made no adjustment to the \$2,615 of capitalized interest allocated to Electric Pumping Equipment (NARUC Acct. 311), as this cost component was included in the Company's \$258,221 retirement of Well 16 plant relating to Account 311.

Q. In its review of the case, did Staff find other instances in which capitalized interest was improperly allocated to plant?

A. Yes. Staff found that \$200 of capitalized interest had improperly been allocated to the Well 11 account in 2002. Of this total, \$18 was allocated to Structures & Improvements (NARUC

¹⁵ In its response to Staff data request JAC 3-1, the Company acknowledged that RRQC charges capitalized interest to development projects, but its policy is not to capitalize interest on utility infrastructure projects to be purchased by QCW.

1 Acct. 304), \$9 was allocated to Wells & Springs (NARUC Acct. 307), and \$173 was allocated
2 to Electric Pumping Equipment (NARUC Acct. 311).

3
4 *Rate Base Adjustment No. 3 – Capitalization of Well 12 New Source Water Testing Costs*

5 **Q. Why did Staff make an adjustment to capitalize the \$4,013 of Well 12 new source water**
6 **testing costs?**

7 A. The Well 12 new source water testing costs incurred in the test-year represent a one-time
8 water testing expense which, on a going-forward basis, will not have to be repeated.
9 Accordingly, Staff determined that it would be appropriate to capitalize these costs rather
10 than expensing them, for to recognize these as recurring costs would overstate QCW's annual
11 water testing expenses on a going-forward basis (see discussion in Staff's Engineering
12 Report).

13
14 *Rate Base Adjustment No. 4 – Accumulated Depreciation*

15 **Q. What is the Company's proposed balance for accumulated depreciation?**

16 A. The Company's application proposes an accumulated depreciation balance of \$2,352,796.

17
18 **Q. How did QCW calculate its proposed balance of accumulated depreciation in the**
19 **application?**

20 A. The Company began with the balance of accumulated depreciation authorized in its last rate
21 case, Decision No. 61611, dated April 1, 1999.¹⁶ In its prior rate case, QCW used a test year
22 ended December 31, 1997. In the application, the Company detailed changes in plant and
23 accumulated depreciation from January 1, 1998 through December 31, 2013, a period of
24 sixteen years. Plant was depreciated at a composite rate of 4.08 percent per annum, using a
25 half-year convention.

¹⁶ Docket No. W-02514A-98-0655.

1 **Q. Does Staff recommend an adjustment to this calculation?**

2 A. Yes

3
4 **Q. What specific adjustments did Staff make to Accumulated Depreciation?**

5 A. Staff adjusted the accumulated depreciation balances for the following nine plant accounts:
6 to NARUC Acct. 301 (Organization Costs), Staff's adjustment increases accumulated
7 depreciation by \$36,273; to NARUC Acct. 304 (Structures & Improvements), Staff's
8 adjustment decreases accumulated depreciation by \$8; to NARUC Acct. 307 (Wells &
9 Springs), Staff's adjustment decreases accumulated depreciation by \$42,119; to NARUC Acct.
10 311 (Electric Pumping Equipment), Staff's adjustment increases accumulated depreciation by
11 \$259,531; to NARUC Acct. 330.1 (Storage Tanks), Staff's adjustment increases accumulated
12 depreciation by \$42,091; to NARUC Acct. 331 (Transmission & Distribution Mains), Staff's
13 adjustment increases accumulated depreciation by \$11,195; to NARUC Acct. 333 (Services),
14 Staff's adjustment increases accumulated depreciation by \$80; to NARUC Acct. 334 (Meters
15 & Meter Installations), Staff's adjustment decreases accumulated depreciation by \$969; and to
16 NARUC Acct. 335 (Hydrants), Staff's adjustment increases accumulated depreciation by
17 \$585, as shown in Schedule JAC-6.

18
19 **Q. Why is Staff recommending an adjustment to accumulated depreciation?**

20 A. There are several reasons. First, the 4.08 percent composite depreciation rate authorized by
21 the Commission in Decision No. 61611 did not go into effect until April 1, 1999; thus, it was
22 necessary for Staff to make an adjustment to reflect accumulated depreciation at the
23 previously authorized rate for the 15-month period, January 1, 1998 – April 1, 1999. In
24 researching the Company's prior docket history, however, Staff determined that no such
25 previously authorized depreciation rate had been established by the Commission.¹⁷

¹⁷ QCW was granted its Certificate of Convenience and Necessity ("CC&N") by the Commission in Decision No. 56738 (Docket No. U-2514-89-109), dated December 7, 1989. In the Decision, QCW was ordered to file for a rate review

1 Accordingly, Staff utilized a composite depreciation rate of 5.0% over this 15-month period,
2 as this had been the customary composite depreciation rate used by the Commission at that
3 time. Second, Staff determined that the Company was accruing an accumulated depreciation
4 reserve balance on NARUC Account 301 (Organization Costs).¹⁸ By their nature,
5 organizational costs are incurred when initially creating/incorporating a company, and include
6 legal fees and other costs whose useful life extends over the life of the organization.
7 Accordingly, for purposes of its analysis Staff did not depreciate/amortize organizational
8 costs, and instead made a downward adjustment to accumulated depreciation by the total
9 amount booked to NARUC Acct. 301 by the Company. Third, Staff determined that because
10 Well 16 had a market value of zero at the time it was acquired from QCW's affiliate, a
11 retirement of any portion of the \$510,205 cost associated with that well by the Company was
12 inappropriate. Accordingly, Staff made an adjustment to accumulated depreciation in an
13 amount equal to the \$258,221 Well 16 costs recorded in NARUC Acct. 311 (Electronic
14 Pumping Equipment) which the Company retired in 2011.

15
16 **Q. What depreciation rate was used by the Company over the 15-month period, January**
17 **1, 1998 – April 1, 1999?**

18 **A.** The Company used the composite 4.08 percent depreciation rate established in Decision No.
19 61611 over this 15-month period of time.

20
21 **Q. Did Staff adjust the amounts proposed for accumulated depreciation?**

22 **A.** Yes
23

within six months after a 12-month period of actual operation at which time all issues related to rate base items would be resolved. The Company failed to file for such a rate review, however, and as a consequence no previously authorized depreciation rate had been established by the Commission.

¹⁸ As of the December 31, 1997 prior test-year end, the balance of accumulated depreciation for this account was reported to be \$12,434, as shown in Bourassa Schedule B-2, Page 3.5.

1 **Q. How did Staff calculate its recommended Accumulated Depreciation?**

2 A. Staff began with the accumulated depreciation balance adopted by the Commission in the last
3 rate case and applied the Commission-authorized depreciation rates to depreciable plant and
4 all documented additions in the intervening years.

5
6 **Q. Did Staff recalculate the Accumulated Depreciation balance using Staff's**
7 **recommended plant balances?**

8 A. Yes. Staff recalculated the accumulated depreciation balance using the plant in service
9 balances that were adjusted by the reclassifications and adjustments made by Staff.

10
11 **Q. Why did Staff make these adjustments?**

12 A. The adjustments made for accumulated depreciation to Structures & Improvements (Acct.
13 304), Wells & Springs (Acct. 307), and Electric Pumping Equipment (Acct. 311) correspond
14 to the rate base adjustments for these specific accounts. The adjustments made to Storage
15 Tanks (Acct. 330.1), Transmission & Distribution Mains (Acct. 331), Services (Acct. 333),
16 Meters & Meter Installations (Acct. 334), and Hydrants (Acct. 335) reflect Staff's calculation
17 of accumulated depreciation since the last rate case. Staff's adjustment to Organization Costs
18 (Acct. 301) was made to correct for the Company improperly depreciating the value of a non-
19 depreciable account.

20
21 **Q. What is Staff's overall recommendation regarding QCW's aggregated accumulated**
22 **depreciation reserve?**

23 A. Staff recommends an upward adjustment to accumulated depreciation in the amount of
24 \$234,113, which has the effect of decreasing rate base by \$234,113 as shown on schedule
25 JAC-6.

26

OPERATING INCOME

Operating Income Summary

Q. What are the results of Staff's analysis of test year revenues, expenses, and operating income?

A. As shown in Schedules JAC-7 and JAC-8, Staff's analysis resulted in test year revenues of \$844,719, expenses of \$712,477 and operating income of \$132,242. The Company's application shows test year revenues of \$844,719, expenses of \$725,756 and operating income of \$118,963. Staff's recommendation results from the six operating income adjustments discussed below.

Operating Income Adjustment No. 1 – Water Testing Expense

Q. What is the Company proposing for Water Testing expense?

A. The Company is proposing \$12,864 for Water Testing expense in the test year.

Q. What is Staff's Recommendation?

A. Staff recommends annual Water Testing expenses of \$7,608 (See Staff engineering testimony of Michael Thompson), a decrease of \$5,256. Staff's adjustment to water testing expense is presented in Schedule JAC-9.

Operating Income Adjustment No. 2 – Transportation Expense

Q. What is QCW proposing for test year transportation expense?

A. QCW proposes \$13,067 for test year transportation expense.

1 **Q. What is Staff recommending for test year transportation expense?**

2 A. As shown in Schedule JAC-10, Staff recommends transportation expense of \$10,931. Staff's
3 recommended adjustment is based upon the elimination of personal commute mileage which should
4 not be the responsibility of ratepayers.

5

6 *Operating Income Adjustment No. 3 – Miscellaneous Expense*

7 **Q. What is QCW proposing for miscellaneous expense?**

8 A. QCW proposes miscellaneous expense of \$12,741. Staff's recommended adjustment is based
9 upon a reclassification of water testing expenses from miscellaneous expense to contractual
10 service expense.

11

12 **Q. What is Staff's recommendation?**

13 A. As shown in Schedule JAC-11, Staff recommends miscellaneous expense of \$7,954.

14

15 *Operating Income Adjustment No. 4 – Depreciation Expense*

16 **Q. What is QCW proposing for test-year depreciation expense?**

17 A. QCW proposes test-year depreciation expense of \$294,340.

18

19 **Q. What is Staff recommending for test-year depreciation expense?**

20 A. Staff recommends test-year depreciation expense of \$286,061, an \$8,279 decrease from the
21 Company's proposed amount, as shown in Schedule JAC-12. This adjustment is necessary to
22 synchronize Staff's plant in service recommendation with the resulting calculation of
23 depreciation expense. Staff's adjustment also used the recommended depreciation rates
24 shown in Table E, Section H of the Engineering report.

25

1 *Operating Income Adjustment No. 5 – Property Tax Expense*

2 **Q. What is QCW proposing for test-year property tax expense?**

3 A. QCW proposes test-year property tax expense of \$35,106.

4
5 **Q. What is Staff recommending for test-year property tax expense?**

6 A. Staff recommends \$32,674 for test-year property tax expense, a \$2,432 decrease to the
7 Company's proposed amount, as shown in Schedule JAC-13.

8
9 **Q. Did the Company use the modified ADOR calculation for property tax expense?**

10 A. Staff and the Company used the same methodology to calculate the property taxes. Both the
11 Company and Staff propose an assessment ratio of 18 percent, in keeping with Arizona
12 Revised Statutes ("ARS") § 42-15001.

13
14 *Operating Income Adjustment No. 6 – Income Tax Expense*

15 **Q. What is QCW proposing for income tax expense?**

16 A. QCW proposes test-year income tax expense of \$57,233.

17
18 **Q. Did Staff make an adjustment to test year Income Tax Expense?**

19 A. Yes.

20
21 **Q. What was the basis of Staff's adjustment to income taxes?**

22 A. Staff applied the statutory state and federal income tax rates to Staff's test year taxable
23 income. Income tax expenses for the test year and recommended revenues are shown in
24 Schedule JAC-2.

25

1 **Q. Did the Company and Staff use the same methodology to calculate income taxes?**

2 A. Yes, for the most part. In doing so, Staff adopted the 4.9 percent State tax rate used by the
3 Company.

4
5 **Q. When is the 4.9 percent State income tax rate expected to go into effect?**

6 A. The 4.9 percent State income tax rate is expected to go into effect as of January 1, 2017.
7 Even though the effective date for this state income tax rate is over a year out, Staff believes
8 capturing this rate is appropriate because this is the rate that will be in effect during most of
9 the time period before the Company's next rate case. Based upon the five year amortization
10 period being used for rate case expense, the next QCW rate case filing is not anticipated until
11 2020.

12
13 **Q. What does Staff recommend for test-year income tax expense for the Company?**

14 A. Staff recommends test-year income tax expense of \$66,844, an increase of \$9,611 from the
15 Company proposed amount, as shown in Schedule JAC-14.

16
17 **Q. In its Application, the Company proposes the adoption of a Purchased Power
18 Adjustment Mechanism ("PPAM") in rates. Does Staff plan to address this issue in
19 direct testimony at this time, or when filing rate design testimony?**

20 A. Staff will address this issue in Staff's rate design direct testimony, to be filed on May 13, 2015.

21
22 **Q. In light of the above, does Staff recommend the use of rate base/rate of return
23 methodology to determine the Company's revenue requirement?**

24 A. Yes. Staff recommends that QCW be authorized to earn an overall rate of return of 9.5
25 percent on Staff's recommended \$3,196,580 rate base.

26

1 **Q.** **Does this conclude your direct testimony?**

2 **A.** Yes, it does.

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	[A]	[B]	[C]	[D]
		COMPANY ORIGINAL COST	COMPANY FAIR VALUE	STAFF ORIGINAL COST	STAFF FAIR VALUE
1	Adjusted Rate Base	\$ 3,678,863	\$ 3,678,863	\$ 3,196,580	\$ 3,196,580
2	Adjusted Operating Income (Loss)	\$ 118,963	\$ 118,963	\$ 132,242	\$ 132,242
3	Current Rate of Return (L2 / L1)	3.23%	3.23%	4.14%	4.14%
4	Required Rate of Return	10.00%	10.00%	9.50%	9.50%
5	Required Operating Income (L4 * L1)	\$ 367,886	\$ 367,886	\$ 303,675	\$ 303,675
6	Operating Income Deficiency (L5 - L2)	\$ 248,923	\$ 248,923	\$ 171,433	\$ 171,433
7	Gross Revenue Conversion Factor	1.6543	1.6543	1.6826	1.6826
8	Required Revenue Increase (L7 * L6)	\$ 411,785	\$ 411,785	\$ 288,454	\$ 288,454
9	Adjusted Test Year Revenue	\$ 844,719	\$ 844,719	\$ 844,719	\$ 844,719
10	Proposed Annual Revenue (L8 + L9)	\$ 1,256,504	\$ 1,256,504	\$ 1,133,173	\$ 1,133,173
11	Required Increase in Revenue (%)	48.75%	48.75%	34.15%	34.15%

References:

Column (A): Company Schedule B-1

Column (B): Company Schedule B-1

Column (C): Staff Schedules OCRB, GRCF, TYOI & COC

Column (D): Staff Schedules OCRB, GRCF, TYOI & COC

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
<u>Calculation of Gross Revenue Conversion Factor:</u>					
1	Revenue	100.0000%			
2	Uncollectible Factor (Line 11)	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Tax Rate (Line 17) + Property Tax Factor (Line 22)	40.5683%			
5	Subtotal (L3 - L4)	59.4317%			
6	Revenue Conversion Factor (L1 / L5)	1.6826			
<u>Calculation of Uncollectible Factor:</u>					
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 17)	39.7920%			
9	One Minus Combined Income Tax Rate (L7 - L8)	60.2080%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0			
<u>Calculation of Effective Tax Rate:</u>					
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
13	Arizona State Income Tax Rate	4.9000%			
14	Federal Taxable Income (L12 - L13)	95.1000%			
15	Applicable Federal Income Tax Rate (Line 44)	36.6898%			
16	Effective Federal Income Tax Rate (L14 x L15)	34.8920%			
17	Combined Federal and State Income Tax Rate (L13 + L16)	39.7920%			
<u>Calculation of Effective Property Tax Factor:</u>					
18	Unity	100.0000%			
19	Combined Federal and State Tax Rate (Line 17)	39.7920%			
20	One Minus Combined Income Tax Rate (L18 - L19)	60.2080%			
21	Property Tax Factor (XXX-18, L24)	1.2893%			
22	Effective Property Tax Factor (L21 * L22)	0.007762861			
23	Combined Federal and State Tax and Property Tax Rate (L17+L22)		40.5683%		
24	Required Operating Income (Schedule XXX-1, Line 5)	\$ 303,675			
25	Adjusted Test Year Operating Income (Loss) (Schedule XXX-10, Line 40)	\$ 132,242			
26	Required Increase in Operating Income (L24 - L25)		\$ 171,433		
27	Income Taxes on Recommended Revenue (Col. (D), L52)	\$ 180,146			
28	Income Taxes on Test Year Revenue (Col. (B), L52)	\$ 66,844			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		\$ 113,302		
30	Recommended Revenue Requirement (Schedule XXX-1, Line 10)	\$ 1,133,173			
31	Uncollectible Rate (Line 10)	0.0000%			
32	Uncollectible Expense on Recommended Revenue (L24 * L25)	\$ -			
33	Adjusted Test Year Uncollectible Expense	\$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32 - L33)		\$ -		
35	Property Tax with Recommended Revenue (XXX-18, L19)	\$ 36,393			\$ (0)
36	Property Tax on Test Year Revenue (XXX-18, L16)	\$ 32,674			
37	Increase in Property Tax Due to Increase in Revenue (XXX-18, L22)		\$ 3,719		
38	Total Required Increase in Revenue (L26 + L30 + L34+L37)		\$ 288,454		
<u>Calculation of Income Tax:</u>					
39	Revenue (Schedule XXX-10, Col.(C), Line 5 & Sch. XXX-1, Col. (B), Line 10)	\$ 844,719	\$ 288,454	\$ 1,133,173	
40	Operating Expenses Excluding Income Taxes	645,633	\$ 3,719	649,352	
41	Synchronized Interest (L47)	-		-	
42	Arizona Taxable Income (L36 - L37- L38)	\$ 199,086		\$ 483,821	
43	Arizona State Income Tax Rate	4.9000%		4.9000%	
44	Arizona Income Tax (L39 x L40)		\$ 9,755		\$ 23,707
45	Federal Taxable Income (L33 - L35)	\$ 189,331		\$ 460,114	
46	Federal Tax on First Income Bracket (\$1 - \$50,000) @ 15%	7,500		7,500	
47	Federal Tax on Second Income Bracket (\$50,001 - \$75,000) @ 25%	6,250		6,250	
48	Federal Tax on Third Income Bracket (\$75,001 - \$100,000) @ 34%	8,500		8,500	
49	Federal Tax on Fourth Income Bracket (\$100,001 - \$335,000) @ 39%	34,839		91,650	
50	Federal Tax on Fifth Income Bracket (\$335,001 - \$10,000,000) @ 34%	-		42,539	
51	Total Federal Income Tax		\$ 57,089		\$ 156,439
52	Combined Federal and State Income Tax (L35 + L42)		\$ 66,844		\$ 180,146
53	Applicable Federal Income Tax Rate [Col. (D), L42 - Col. (B), L42] / [Col. (C), L36 - Col. (A), L36]				36.69%
<u>Calculation of Interest Synchronization:</u>					
54	Rate Base (Schedule XXX-3, Col. (C), Line (17))	\$ 3,196,580			
55	Weighted Average Cost of Debt (Schedule XXX-1)	0.00%			
56	Synchronized Interest (L45 X L46)	\$ -			

RATE BASE - ORIGINAL COST/FAIR VALUE

LINE NO.	DESCRIPTION	[A]	[B]	REF	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS		STAFF AS ADJUSTED
1	Plant in Service	\$ 7,819,192	\$ (248,170)	1, 2, 3	\$ 7,571,022
2	Less: Accumulated Depreciation	2,352,796	234,113	4	2,586,909
3	Net Plant in Service	<u>\$ 5,466,396</u>	<u>\$ (482,283)</u>		<u>\$ 4,984,113</u>
<u>LESS:</u>					
4	Net Contribution in Aid-of Construction (CIAC)	\$ 535,758	\$ -		\$ 535,758
5	Advances in Aid of Construction (AIAC)	-	-		-
8	Customer Deposits	180,221	-		180,221
9	Deferred Income Tax Credits	1,071,554	-		1,071,554
	Total Deductions	<u>\$ 1,787,533</u>	<u>\$ -</u>		<u>\$ 1,787,533</u>
<u>ADD:</u>					
10	Unamortized Finance Charges	\$ -	\$ -		\$ -
11	Deferred Tax Assets	-	-		-
12	Allowance for Working Capital	-	-		-
13	Intentional Left Blank	-	-		-
	Total Additions	<u>\$ -</u>	<u>\$ -</u>		<u>\$ -</u>
14	Original Cost Rate Base	<u>\$ 3,678,863</u>	<u>\$ (482,283)</u>		<u>\$ 3,196,580</u>

References:

Column (A), Company Schedule B-1
Column (B): Schedules JAC-5a, JAC-5b, JAC-5c, and JAC-6
Column (C): Column (A) + Column (B)

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

5

LINE NO.	ACCT. NO.	DESCRIPTION	[A]	[B]	[C]	[D]	[E]	[F]
			COMPANY AS FILED	Well 16 Disallowance ADJ #1	Capitalized Interest ADJ #2	Capitalization of Well 12 test costs ADJ #3	Accumulated Depreciation ADJ #4	STAFF ADJUSTED
<u>PLANT IN SERVICE:</u>								
1	301	Organization Costs	\$ 37,295	\$ -	\$ -	\$ -	\$ -	\$ 37,295
2	302	Franchise Costs	-	-	-	-	-	-
3	303	Land & Land Rights	92,895	-	-	-	-	92,895
4	304	Structures & Improvements	75,442	-	(18)	-	-	75,424
5	307	Wells & Springs	834,248	(249,432)	(2,561)	4,013	-	586,268
6	310	Power Generation Equipment	37,618	-	-	-	-	37,618
7	311	Electric Pumping Equipment	1,137,275	-	(173)	-	-	1,137,102
8	320	Water Treatment Equipment	-	-	-	-	-	-
9	320.2	Solutions & Feeders	-	-	-	-	-	-
	320.3	Arsenic Remediation Plant	-	-	-	-	-	-
10	330	Distribution Reservoirs & Standpipes	-	-	-	-	-	-
11	330.1	Storage Tanks	856,574	-	-	-	-	856,574
12	330.2	Pressure Tanks	32,236	-	-	-	-	32,236
13	331	Transmission & Distribution Mains	3,194,161	-	-	-	-	3,194,161
14	333	Services	891,232	-	-	-	-	891,232
15	334	Meters & Meter Installations	90,315	-	-	-	-	90,315
16	335	Hydrants	477,182	-	-	-	-	477,182
17	336	Backflow Prevention Devices	-	-	-	-	-	-
18	339	Other Plant & Misc. Equip.	-	-	-	-	-	-
19	340	Office Furniture & Fixtures	2,071	-	-	-	-	2,071
20	340.1	Computer & Software	-	-	-	-	-	-
21	341	Transportation Equipment	-	-	-	-	-	-
22	342	Store Equipment	-	-	-	-	-	-
23	343	Tools & Work Equipment	2,399	-	-	-	-	2,399
24	344	Laboratory Equipment	-	-	-	-	-	-
25	345	Power Operated Equipment	-	-	-	-	-	-
26	346	Communications Equipment	57,194	-	-	-	-	57,194
27	347	Miscellaneous Equipment	-	-	-	-	-	-
28	348	Other Tangible Plant	1,056	-	-	-	-	1,056
29		Gross Utility Plant in Service	\$ 7,819,192	\$ (249,432)	\$ (2,752)	\$ 4,013	\$ -	\$ 7,571,022
30		Less: Accumulated Depreciation	2,352,796	-	-	-	234,113	2,586,909
31		Net Utility Plant in Service (L29 - L30)	\$ 5,466,396	\$ (249,432)	\$ (2,752)	\$ 4,013	\$ (234,113)	\$ 4,984,113
<u>DEDUCTIONS</u>								
32		Contributions in Aid of Construction (CIAC)	\$ 820,205	\$ -	\$ -	\$ -	\$ -	\$ 820,205
33		Less: Accumulated Amortization	284,447	-	-	-	-	284,447
34		Net CIAC (L32 - L33)	\$ 535,758	\$ -	\$ -	\$ -	\$ -	\$ 535,758
35		Advances in Aid of Construction (AIAC)	-	-	-	-	-	-
36		Customer Meter Deposits	180,221	-	-	-	-	180,221
37		Deferred Income Tax Credits	1,071,554	-	-	-	-	1,071,554
38		Total Deductions	\$ 1,787,533	\$ -	\$ -	\$ -	\$ -	\$ 1,787,533
<u>ADDITIONS:</u>								
39		Unamortized Finance Charges	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
40		Deferred Tax Assets	-	-	-	-	-	-
41		Allowance for Working Capital	-	-	-	-	-	-
42		Intentional Left Blank	-	-	-	-	-	-
43		Total Additions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
44		ORIGINAL COST RATE BASE	\$ 3,678,863	\$ (249,432)	\$ (2,752)	\$ 4,013	\$ (234,113)	\$ 3,196,580

ADJ #	Description	Reference Schedule
1	Well 16 Disallowance	JAC - 5a
2	Capitalized Interest	JAC - 5b
3	Capitalization of Well 12 New Source Testing Costs	JAC - 5c
4	Accumulated Depreciation	JAC - 6

RATE BASE ADJUSTMENT NO. 1 - Disallowance of Well 16 Drilling Costs

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJUSTMENT	[C] STAFF ADJUSTED
1	Wells and Springs (Acct. No. 307)	\$ 249,432	\$ (249,432)	\$ -
	Well 16 Drilling Costs recored in NARUC Acct. 307		\$ 251,984	
	Less: Capitalized Interest		2,552	
	Net Well 16 Drilling Costs to be Disallowed		\$ 249,432	

REFERENCES:

Column [A]: Company Schedule B-2; Company response to Staff DR JAC 1-12
Column [B]: Testimony, Schedule JAC-5b
Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 2 - CAPITALIZED INTEREST

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJUSTMENT	Year	[C] STAFF ADJUSTED
	301	Organization Costs	\$ 37,295			\$ 37,295
	302	Franchise Costs	-			-
	303	Land & Land Rights	92,895			92,895
	304	Structures & Improvements	75,442	\$ (18)	2002	75,424
	307	Wells & Springs	834,248	\$ (2,561)	2002; 2009	831,687
	310	Power Generation Equipment	37,618			37,618
	311	Electric Pumping Equipment	1,137,275	(173)	2002	1,137,102
	320	Water Treatment Equipment	-			-
	320.2	Solutions & Feeders	-			-
	320.3	Arsenic Remediation Plant	-			-
	330	Distribution Reservoirs & Standpipes	-			-
	330.1	Storage Tanks	856,574			856,574
	330.2	Pressure Tanks	32,236			32,236
	331	Transmission & Distribution Mains	3,194,161			3,194,161
	333	Services	891,232			891,232
	334	Meters & Meter Installations	90,315			90,315
	335	Hydrants	477,182			477,182
	336	Backflow Prevention Devices	-			-
	339	Other Plant & Misc. Equip.	-			-
	340	Office Furniture & Fixtures	2,071			2,071
	340.1	Computer & Software	-			-
	341	Transportation Equipment	-			-
	342	Store Equipment	-			-
	343	Tools & Work Equipment	2,399			2,399
	344	Laboratory Equipment	-			-
	345	Power Operated Equipment	-			-
	346	Communications Equipment	57,194			57,194
	347	Miscellaneous Equipment	-			-
	348	Other Tangible Plant	1,056			1,056
			<u>\$ 7,819,193</u>	<u>\$ (2,752)</u>		<u>\$ 7,816,441</u>

REFERENCES:

Column [A]: Company Schedule B-2

Column [B]: Testimony, JAC; Data Request JAC 1-3 and JAC 3-1

Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 3 - Capitalization of Well 12 New Source Water Testing Costs

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJUSTMENT	[C] STAFF ADJUSTED
1	Wells and Springs (Acct. No. 307)	\$ -	\$ 4,013	\$ 4,013

REFERENCES:

Column [A]: Company Schedule B-2

Column [B]: Testimony, Company response to Staff DR JAC 1-22

Column [C]: Column [A] + Column [B]

Docket No. W-02514A-14-0343

Test Year Ended December 31, 2013

RATE BASE ADJUSTMENT NO. 4 - ACCUMULATED DEPRECIATION

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJUSTMENT	[C] STAFF ADJUSTED
1	301	Organization Costs	\$ 36,273	\$ (36,273)	\$ -
2	302	Franchise Costs	-	-	-
3	303	Land & Land Rights	-	-	-
4	304	Structures & Improvements	16,734	(8)	16,726
5	307	Wells & Springs	258,516	(42,119)	216,397
6	310	Power Generation Equipment	13,537	-	13,537
7	311	Electric Pumping Equipment	(39,241)	259,531	220,290
8	320	Water Treatment Equipment	-	-	-
9	320.2	Solutions & Feeders	-	-	-
10	320.3	Arsenic Remediation Plant	-	-	-
11	330	Distribution Reservoirs & Standpipes	-	-	-
12	330.1	Storage Tanks	377,367	42,091	419,458
13	330.2	Pressure Tanks	12,495	-	12,495
14	331	Transmission & Distribution Mains	1,244,095	11,195	1,255,289
15	333	Services	237,169	80	237,249
16	334	Meters & Meter Installations	30,053	(969)	29,084
17	335	Hydrants	150,082	585	150,668
18	336	Backflow Prevention Devices	-	-	-
19	339	Other Plant & Misc. Equip.	-	-	-
20	340	Office Furniture & Fixtures	416	-	416
21	340.1	Computer & Software	-	-	-
22	341	Transportation Equipment	-	-	-
23	342	Store Equipment	-	-	-
24	343	Tools & Work Equipment	399	-	399
25	344	Laboratory Equipment	-	-	-
26	345	Power Operated Equipment	-	-	-
27	346	Communications Equipment	13,876	-	13,876
28	347	Miscellaneous Equipment	-	-	-
29	348	Other Tangible Plant	1,027	-	1,027
Accumulated Depreciation			<u>\$ 2,352,796</u>	<u>\$ 234,113</u>	<u>\$ 2,586,909</u>

REFERENCES:

Column [A]: Company Schedule B-2

Column [B]: Testimony

Column [C]: Column [A] + Column [B]

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY ADJUSTED TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
1	<u>REVENUES:</u>					
2	Metered Water Sales	\$ 837,366	\$ -	\$ 837,366	\$ 288,454	\$ 1,125,820
3	Water Sales - Unmetered	-	-	-	-	-
4	Other Operating Revenue	7,353	-	7,353	-	7,353
5	Total Operating Revenues	<u>\$ 844,719</u>	<u>\$ -</u>	<u>\$ 844,719</u>	<u>\$ 288,454</u>	<u>\$ 1,133,173</u>
6	<u>OPERATING EXPENSES:</u>					
7	Salaries & Wages	\$ 85,321	\$ -	\$ 85,321	\$ -	\$ 85,321
		21,254	-	21,254	-	21,254
8	Purchased Water	-	-	-	-	-
9	Purchased Power	72,800	-	72,800	-	72,800
10	Chemicals	6,454	-	6,454	-	6,454
11	Repairs & Maintenance	23,693	-	23,693	-	23,693
12	Office Supplies & Expense	20,818	-	20,818	-	20,818
13	Contractual Services - Engineering	-	-	-	-	-
	Contractual Services - Accounting	380	-	380	-	380
	Contractual Services - Legal	468	-	468	-	468
	Contractual Services - Other	17,777	-	17,777	-	17,777
	Contractual Services - Testing	12,864	(5,256) 1	7,608	-	7,608
14	Water Testing	-	-	-	-	-
15	Rents	566	-	566	-	566
16	Transportation Expense	13,067	(2,136) 2	10,931	-	10,931
17	Insurance - General Liability	524	-	524	-	524
18	Insurance - Health & Life	9,483	-	9,483	-	9,483
19	Regulatory Commission Expense	425	-	425	-	425
	Reg. Comm. Exp. - Rate Case	40,000	-	40,000	-	40,000
	Bad Debt Expense	442	-	442	-	442
20	Miscellaneous Expense	12,741	(4,787) 3	7,954	-	7,954
21	Depreciation Expense	294,340	(8,279) 4	286,061	-	286,061
22	Taxes Other than Income	-	-	-	-	-
23	Property Taxes	35,106	(2,432) 5	32,674	3,719	36,393
24	Income Tax	57,233	9,611 6	66,844	113,302	180,146
25	Total Operating Expenses	<u>\$ 725,756</u>	<u>\$ (13,279)</u>	<u>\$ 712,477</u>	<u>\$ 117,021</u>	<u>\$ 829,498</u>
26	Operating Income (Loss)	<u>\$ 118,963</u>	<u>\$ 13,279</u>	<u>\$ 132,242</u>	<u>\$ 171,433</u>	<u>\$ 303,675</u>

References:

Column (A): Company Schedule C-1
Column (B): Schedule JAC-8
Column (C): Column (A) + Column (B)
Column (D): Schedules JAC-13 and JAC-14
Column (E): Column (C) + Column (D)

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] Water Testing ADJ #1	[C] Transportation Exp. ADJ #2	[D] Misc. Exp. ADJ #3	[E] Depreciation Exp. ADJ #4	[F] Property Tax ADJ #5	[G] Income Tax ADJ #6	[H] STAFF ADJUSTED
1	REVENUES:								
2	461 Metered Water Sales	\$ 837,366	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 837,366
3	460 Water Sales - Unmetered	-	-	-	-	-	-	-	-
4	474 Other Operating Revenue	7,353	-	-	-	-	-	-	7,353
5	Total Operating Revenues	<u>\$ 844,719</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 844,719</u>
6	OPERATING EXPENSES:								
7	601 Salaries & Wages	\$ 85,321	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 85,321
8	Employee Pensions and Benefits	21,254	-	-	-	-	-	-	21,254
9	610 Purchased Water	-	-	-	-	-	-	-	-
10	615 Purchased Power	72,800	-	-	-	-	-	-	72,800
11	618 Chemicals	6,454	-	-	-	-	-	-	6,454
12	620 Materials and Supplies	23,693	-	-	-	-	-	-	23,693
13	621 Office Supplies & Expense	20,818	-	-	-	-	-	-	20,818
14	630 Contractual Services - Engineering	-	-	-	-	-	-	-	-
15	Contractual Services - Accounting	380	-	-	-	-	-	-	380
16	Contractual Services - Legal	468	-	-	-	-	-	-	468
17	Contractual Services - Other	17,777	-	-	-	-	-	-	17,777
18	Contractual Services - Testing	12,864	(5,256)	-	-	-	-	-	7,608
19	635 Water Testing	-	-	-	-	-	-	-	-
20	641 Rents	566	-	-	-	-	-	-	566
21	650 Transportation Expense	13,067	-	(2,136)	-	-	-	-	10,931
22	Insurance - Vehicle	524	-	-	-	-	-	-	524
23	657 Insurance - General Liability	9,483	-	-	-	-	-	-	9,483
24	666 Regulatory Commission Expense	425	-	-	-	-	-	-	425
25	Reg. Comm. Exp. - Rate Case	40,000	-	-	-	-	-	-	40,000
26	Bad Debt Expense	442	-	-	-	-	-	-	442
27	675 Miscellaneous Expense	12,741	-	-	(4,787)	-	-	-	8,279
28	403 Depreciation Expense	294,340	-	-	-	-	-	-	294,340
29	408 Taxes Other than Income	-	-	-	-	-	-	-	-
30	408.11 Property Taxes	-	-	-	-	-	-	-	-
31	409 Income Tax	35,106	-	-	-	-	(2,432)	-	32,674
32	Total Operating Expenses	<u>\$ 725,756</u>	<u>\$ (5,256)</u>	<u>\$ (2,136)</u>	<u>\$ (4,787)</u>	<u>\$ (8,279)</u>	<u>\$ (2,432)</u>	<u>\$ 9,611</u>	<u>\$ 66,844</u>
33	Operating Income (Loss)	<u>\$ 118,963</u>	<u>\$ 5,256</u>	<u>\$ 2,136</u>	<u>\$ 4,787</u>	<u>\$ 8,279</u>	<u>\$ 2,432</u>	<u>\$ (9,611)</u>	<u>\$ 132,242</u>

ADJ #	Description	Reference Schedule
1	Contractual Services - Water Testing Expense	JAC - 9
2	Miscellaneous Expense	JAC - 10
3	Transportation Expense	JAC - 11
4	Depreciation Expense	JAC - 12
5	Property Tax Expense	JAC - 13
6	Income Tax Expense	JAC - 14
7		

OPERATING INCOME ADJUSTMENT NO. 1 - Contractual Services - Water Testing

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENT	[C] STAFF RECOMMENDED
1	Water Testing Expense	\$ 12,864	\$ (5,256)	\$ 7,608
2	Water Testing Cost reclassified from Misc. Exp.	-	-	-
3	Total	\$ 12,864	\$ (5,256)	\$ 7,608

Contractual Services - Water Testing - per Company	\$ 12,864
Less: Robson Ranch Water Testing Costs - per Staff Engineering	(6,825)
New source testing - reclassified as a capital expenditure	(4,013)
Sub-Total	\$ 2,026
Add: Known and measureable increase to annual water testing expenses	241
Known and measureable increase in MAP water testing expenses	554
MAP water testing costs - reclassified from Miscellaneous Expense	4,787
Contractual Services - Water Testing - per Staff	\$ 7,608

Water testing expenses (going forward) -- As per Staff Engineering	\$ 2,267
Less: Annual test-year water testing expenses accounted for	2,026
Known and measureable increase to annual water testing expenses	\$ 241

MAP testing expenses (going forward) -- As per Staff Engineering	\$ 5,341
Less: Test-year MAP Costs accounted for as Miscellaneous expenses	4,787
Known and measureable increase in MAP water testing expenses	\$ 554

References:

Column (A), Company Schedule C-2 & Workpapers

Column (B): Testimony JAC; Schedule JAC-8

Column (C): Column (A) + Column (B)

OPERATING INCOME ADJUSTMENT NO. 2 - Transportation Expense

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENT	[C] STAFF RECOMMENDED
1	Transportation Expense	\$ 13,067	\$ (2,136)	\$ 10,931
2		-	-	-
3	Total	\$ 13,067	\$ (2,136)	\$ 10,931

Personal Commute Miles of Superintendent	15	miles per day
IRS Standard Mileage Rate for 2013	\$ 0.565	rate per mile
	\$ 8.48	
Number of work days per month	21	
Monthly personal commute expense	\$ 177.98	
Months per year	12	
Annual personal commute expense	\$ 2,135.70	

References:

Column (A), Company Schedule C-2 & Workpapers

Column (B): Testimony JAC; Response to Staff Data Request JAC 1-23

Column (C): Column (A) + Column (B)

OPERATING INCOME ADJUSTMENT NO. 3 - Miscellaneous Expense

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENT	[C] STAFF RECOMMENDED
1	Miscellaneous Expense	\$ 12,741	\$ (4,787)	\$ 7,954
2		-	-	-
3	Total	<u>\$ 12,741</u>	<u>\$ (4,787)</u>	<u>\$ 7,954</u>

To reclassify MAP water testing expenses from Miscellaneous Expense to Contractual Services - Testing (as per Staff Engineer Michael Thompson)

References:

Column (A), Company Schedule C-2 & Workpapers

Column (B): Testimony JAC

Column (C): Column (A) + Column (B)

OPERATING INCOME ADJUSTMENT No. 4 - DEPRECIATION EXPENSE

Line No.	ACCT NO.	DESCRIPTION	GROSS UTILITY PLANT IN SERVICE	FULLY/NON DEPRECIABLE	DEPRECIABLE PLANT	DEPREC. RATE	EXPENSE
		<i>Plant in Service</i>					
1	301	Organization Costs	\$ 37,295	\$ 37,295	\$ -	0.00%	\$ -
2	302	Franchise Costs	-	-	-	0.00%	-
3	303	Land & Land Rights	92,895	92,895	-	0.00%	-
2	304	Structures & Improvements	75,424	-	75,424	3.33%	2,512
3	307	Wells & Springs	586,268	-	586,268	3.33%	19,523
4	310	Power Generation Equipment	37,618	-	37,618	5.00%	1,881
3	311	Electric Pumping Equipment	1,137,102	-	1,137,102	12.50%	142,138
4	320	Water Treatment Equipment	-	-	-	3.33%	-
5	320.2	Solutions & Feeders	-	-	-	20.00%	-
4	320.3	Arsenic Remediation Plant	-	-	-	0.00%	-
5	330	Distribution Reservoirs & Standpipes	-	-	-	0.00%	-
6	330.1	Storage Tanks	856,574	-	856,574	2.22%	19,016
5	330.2	Pressure Tanks	32,236	-	32,236	5.00%	1,612
6	331	Transmission & Distribution Mains	3,194,161	-	3,194,161	2.00%	63,883
7	333	Services	891,232	-	891,232	3.33%	29,678
6	334	Meters & Meter Installations	90,315	-	90,315	8.33%	7,523
7	335	Hydrants	477,182	-	477,182	2.00%	9,544
8	336	Backflow Prevention Devices	-	-	-	6.67%	-
7	339	Other Plant & Misc. Equip.	-	-	-	6.67%	-
8	340	Office Furniture & Fixtures	2,071	-	2,071	6.67%	138
9	340.1	Computer & Software	-	-	-	20.00%	-
8	341	Transportation Equipment	-	-	-	20.00%	-
9	342	Store Equipment	-	-	-	4.00%	-
10	343	Tools & Work Equipment	2,399	-	2,399	5.00%	120
9	344	Laboratory Equipment	-	-	-	10.00%	-
10	345	Power Operated Equipment	-	-	-	5.00%	-
11	346	Communications Equipment	57,194	-	57,194	10.00%	5,719
10	347	Miscellaneous Equipment	-	-	-	10.00%	-
11	348	Other Tangible Plant	1,056	-	1,056	10.00%	106
29		Subtotal General	<u>\$ 7,571,022</u>		<u>\$ 7,440,832</u>		\$ 303,392
30		Less: Amortization of Contributions (Depreciable Plant/Depreciation Exp.)			\$ 820,205	2.1130%	\$ 17,331
31		Staff Recommended Depreciation Expense					\$ 286,061
32		Company Proposed Depreciation Expense					<u>294,340</u>
33		Increase/(Decrease) to Depreciation Expense					<u>\$ (8,279)</u>

OPERATING INCOME ADJUSTMENT No. 5 - PROPERTY TAXES

LINE NO.	DESCRIPTION	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues	\$ 844,719	\$ 844,719
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	\$ 1,689,438	\$ 1,689,438
4	Staff Recommended Revenue	844,719	1,133,173
5	Subtotal (Line 4 + Line 5)	\$ 2,534,157	\$ 2,822,611
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	\$ 844,719	\$ 940,870
8	Department of Revenue Multiplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	\$ 1,689,438	\$ 1,881,741
10	Plus: 10% of CWIP		
11	Less: Net Book Value of Licensed Vehicles		
12	Full Cash Value (Line 9 + Line 10 - Line 11)	\$ 1,689,438	\$ 1,881,741
13	Assessment Ratio		
14	Assessment Value (Line 12 * Line 13)	\$ 304,099	\$ 338,713
15	Composite Property Tax Rate - Obtained from ADOR		
16	Staff Test Year Adjusted Property Tax Expense (Line 14 * Line 15)	\$ 32,674	
17	Company Proposed Property Tax	35,106	
18	Staff Test Year Adjustment (Line 16 - Line 17)	\$ (2,432)	
19	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		\$ 36,393
20	Staff Test Year Adjusted Property Tax Expense (Line 16)		32,674
21	Increase in Property Tax Due to Increase in Revenue Requirement		\$ 3,719
22	Increase in Property Tax Due to Increase in Revenue Requirement (Line 21)		\$ 3,719
23	Increase in Revenue Requirement		\$ 288,454
24	Increase in Property Tax Per Dollar Increase in Revenue (Line 22 / Line 23)		1.289340%

REFERENCES:

Line 15: Composite Tax Rate obtained from Arizona Department of Revenue
Line 17: Company Schedule C-1 Page 2
Line 21: Line 19 - Line 20
Line 23: Schedule JAC-1

OPERATING INCOME ADJUSTMENT NO. 6 - INCOME TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENT	[C] STAFF RECOMMENDED
1	Income Tax Expense	\$ 57,233	\$ 9,611	\$ 66,844
2	Total	\$ 57,233	\$ 9,611	\$ 66,844

References:

Column (A), Company Schedule C-2

Column (B): Testimony

Column (C): Column (A) + Column (B)

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S SECOND SET OF DATA REQUESTS

March 20, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

Company Response Number: JAC 2-4

Q. Well 16 – Well 16 is reported as being “in service” in the year 2009. In light of this information, please provide (i) the year Well 16 was drilled, (ii) the date construction work on Well 16 was completed, and (iii) indicate if Well 16 has ever served QCW customers, and if so, the dates (i.e., length of time) service was provided.

RESPONSE: A previous owner of the property that now makes up the Quail Creek development originally drilled well 16 in 1962. As early as 2001, QCW began the process of conducting hydrogeological evaluations of the well and planning to place the well into service as a potable well. In 2006, QCW began the process of actually developing Well 16 for potable water use. The well was rehabilitated and upgraded to meet potable water standards, including the installation of a new well casing inside of the original well casing. After completion of construction, in either late 2006 or 2007, testing of the well indicated that the well produced excessive amounts of sand that may make the well unsuitable for potable use. Because of the sand production, QCW did not immediately place the well into service.

In September 2009, QCW decided to conduct an extended test of the well to determine definitively if it could be used for potable purposes. Since the well was approved for potable use by ADEQ, QCW decided to conduct the test by pumping into the QCW water system rather than pumping the water to waste. Since the well was pumped to the QCW water system during this testing, the well was reported as being in service during the testing. The well was in service during the months of September 2009 and October 2009 while test pumping was conducted. The extended pump testing

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF's SECOND SET OF DATA REQUESTS

March 20, 2015

Respondent: Ray L. Jones
Title: Consultant
Company: Aricor Water Solutions, LC
Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

showed the well to be unsuitable for potable uses and the well was taken out of service in October 2009.

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S FIFTH SET OF DATA REQUESTS

April 6, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215\
Scottsdale, AZ 85255

Company Response Number: JAC 5-3

- Q. Please indicate the date the initial investment write off for the Well 16 project was booked by QCW, and the date the Well 16 investment was reinstated on QCW's books. Additionally, include the date ownership of Well 16 was formally transferred to QCW by its un-regulated plant management/financing affiliate.

RESPONSE:

The Company originally recorded the purchase of Well 16 from its affiliate on 12/19/2011. This was the date of formal transfer from the affiliate. Well 16 was retired on 2/28/2013. The Company did not "write off" the Well 16 investment; therefore, it is not necessary for the Company to "reinstate" the investment on QCW's books.

In preparing this case, pursuant to the fixed asset review discussed in the Direct Testimony of Ray L. Jones, QCW has made several adjustments to its plant balances and accumulated depreciation balances. These adjustments include accounting for the deferred purchase of Well 16 by recognizing depreciation from the true in service date of 2009 (rather than 2011) and retiring Well 16 in 2011 at the time Well 12 was placed into service (rather than 2013). In addition, the adjustments include reclassifying Well 16 plant to corrected NARUC Plant accounts and applying the correct depreciation rates as authorized by the Commission. These adjustments also include reversing the retirement of NARUC Plant account 307 costs associated with Well 15 and applying those costs to Well 12 plant costs in accordance with NARUC accounting instructions.

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF's FIFTH SET OF DATA REQUESTS

April 6, 2015

Respondent: Ray L. Jones
Title: Consultant
Company: Aricor Water Solutions, LC
Address: 18835 N. Thompson Peak Parkway, Suite 215\
Scottsdale, AZ 85255

As with all of the plant and accumulated depreciation adjustments presented in this case, the Well 16 adjustments have not yet been booked by the Company. It is the Company's policy to book such adjustments upon the Commission Order adopting the adjustments for ratemaking purposes.

**QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S SECOND SET OF DATA REQUESTS**

March 20, 2015

Respondent: Ray L. Jones
Title: Consultant
Company: Aricor Water Solutions, LC
Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

Company Response Number: JAC 2-5

Q. Well No. 12 – In his direct testimony (page 8, lines 3-8), Mr. Jones states:

“The second issue involves the drilling of a new water supply well. NARUC requires the cost of “test wells and nonproductive wells drilled as part of a project resulting in a source of water within the same supply area” to be included in the cost of the final production well. Prior to drilling Well 12, QCW first drilled a nonproductive well (Well 16). Rather than charging the cost of the nonproductive well to Well 12, QCW recorded a retirement of the nonproductive well costs.”

Regarding this statement please provide (i) the year Well 12 was drilled, (ii) the date construction work on Well 12 was completed, and (iii) the date Well 12 first went into service.

RESPONSE: QWC began engineering and design of Well 12 in 2010 with the well drilling contract being issued in October 2010. The well drilling and testing was complete by March of 2011. The well was equipped and construction completed by December 2011. Well No. 12 was ready for service in December of 2011 and first used in June 2012.

**QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S FIFTH SET OF DATA REQUESTS**

April 6, 2015

Respondent: Chris Sabin
Title: Controller
Company: Quail Creek Water Company
Address: 9532 East Riggs Road
Sun Lakes, AZ 85248

Company Response Number: JAC 5-2

- Q. Please provide (i) a historical timeline showing, by month, the work which was done on Well 16, from the time the well was first drilled to the time the project was abandoned, and (ii) a historical timeline showing, by month, the work which was done on Well 12, from the time the well was first drilled to present.

RESPONSE:

Please see the attached memo from B&R Engineering, Inc.

B&R Engineering, Inc. MEMO

DATE: April 6, 2015
TO: Quail Creek Water Company
FROM: Todd Fitzgerald, B&R Engineering, Inc.
SUBJECT: QCWC Wells 16 & 12 history

B&R Engineering completed the well engineering, designs and studies and managed the well construction efforts on behalf of Quail Creek Water Company (QCWC) for the subject wells. While the efforts surrounding the construction of Well 12 occurred recently and current Staff performed the work, the engineering work with respect to Well 16 was performed by individuals who are no longer with B&R Engineering. The following is a brief summary of the chronology of the two wells, that of well 16 being based on recollections and review of available records;

QCWC Well 16 chronology

- Q1 2001 - Preliminary engineering and hydrogeology investigation
- Fall 2004 - Engineering site and hydrogeological well design.
- November 16, 2004 - Application made to Pima County Department of Environmental Quality (PDEQ) for Approval to Construct for potable conversion of existing irrigation well
- February 3, 2005 - PDEQ issues Approval to Construct for potable conversion of well
- mid-2005 to mid-2006 well conversion construction completed and well equipped
- June 6, 2006 - ECOC for well 16 submitted to PDEQ
- October 4, 2006 - Well Source Approval for well 16 submitted to PDEQ
- well operated and sand production discovered by non-functioning meter, which turned out to be sand blocked.
- mid-2009 - Lines cleared of sand and pump tested with heavy sanding continuing
- late-2009 - Pump failure due to abrasion/scoring from sand
- Q1 2010 - De-sanding equipment investigated as an option, while preliminary engineering under way for well 12 as a solid backup.

QCWC Well 12 chronology

- December 2007 - preliminary engineering and hydrogeology design
- Q1-June 2010 - Engineering site and hydrogeological well design
- July 2010 - Southwest Ground-water provides production report for Well #12
- August 3, 2010 - ADWR issues construction permit
- October 4, 2010 - PDEQ issues Approval to Construct
- February 2011 - Construction Completed
- December 9, 2011 - Testing completed and Southwest Ground-water as-built info in support of the AOC provided
- May 4, 2012 - PDEQ issues Approval of Construction and well brought on-line.

**QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S FOURTH SET OF DATA REQUESTS**

April 1, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

Company Response Number: JAC 4-1

Q. In response to Staff Data Request JAC 2-2(d)(i), the Company stated it was unable to explain why QCW elected to purchase the schedule of plant assets presented on page 10 of Mr. Jones' direct testimony on a deferred payment basis because "[a]ll of the assets were built for QCW and then placed in service by QCW before any of current management team was involved in the utility operations." In light of this fact, please provide the following:

- a) a copy of the written contract entered into between QCW, a regulated public utility, with its unregulated plant management/financing affiliate, Robson Ranch Quail Creek, LLC, authorizing the initiation of the Well 16 project and detailing the reasons why the project was undertaken; and
- b) copies of all written memoranda between QCW and its unregulated affiliate, Robson Ranch Quail Creek, LLC, relating to the Well 16 project, from the date the project was initiated to the date the project was abandoned at a cost of \$510, 205.

RESPONSE:

- a) There is no written contract between QCW and Robson Ranch Quail Creek, LLC. The Well 16 project was undertaken to expand the water supply available to QCW to accommodate increasing water usage by it growing customer base.

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S FOURTH SET OF DATA REQUESTS

April 1, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

- b) There are no written memoranda between QCW and Robson Ranch Quail Creek, LLC.

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S SECOND SET OF DATA REQUESTS

March 20, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
 Scottsdale, AZ 85255

Company Response Number: JAC 2-2

- Q. Deferred Plant Purchases – On page 10 of his direct testimony, Mr. Jones presents the following schedule of deferred plant purchases QCW acquired from its plant management/financing affiliate:

Project	Year in Service	Year Asset Purchased	Project Cost	Accumulated Depreciation Adjustment
Unit 15 Water Distribution System	2007	2011	\$ 221,062	\$36,077
Unit 23 Water Distribution System	2007	2011	\$184,133	\$30,051
Unit 24 Water Distribution System	2008	2011	\$174,844	\$21,401
McGibbon Water Line Extension	2005	2011	\$ 90,390	\$22,127
Well 11	2002	2009	\$193,816	\$55,354
Well 16	2009	2011	\$510,205	\$41,633
Water Plant No.1, 2 nd Tank	2004	2010	\$450,000	\$110,160
Water Plant No.1, Booster Station	2004	2011	\$776,457	\$221,756
		TOTAL	\$2,600,907	538,559

For each of the above noted deferred plant purchases, please respond to the following:

- a) Provide source documentation to support the original cost of each deferred plant purchase, including copies of all original invoices evidencing the actual

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF's SECOND SET OF DATA REQUESTS

March 20, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

original cost without mark-up or overhead. If the invoices are from an affiliate Robson-owned water utility, provide the underlying source documentation;

b) If applicable, provide the name of the QCW affiliate utility who previously owned the plant assets acquired by QCW;

c) If applicable, provide the date each deferred plant asset was initially placed into service by the prior QCW affiliate utility, accompanied by the balance of accumulated depreciation booked to the asset by that QCW affiliate utility; and

d) Provide (i) a detailed explanation as to why QCW elected to purchase the above plant assets on a deferral basis, rather than paying for the assets at the time the plant was placed into service by QCW, and (ii) indicate if the Company believes it to be in the public interest for QCW to delay ownership of plant used to provide service for periods up to seven years.

RESPONSE: In connection with the response to data request 2.2, all subparts, the Company directs Staff to the response to data request 2.1, *supra*. By way of further response, please see below.

a) The requested source documentation for each deferred plant purchase is attached as the below listed files. Each file contains the documentation for the job indicated by its file name. The documents have been annotated in red to assist with tracking the booked costs.

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF's SECOND SET OF DATA REQUESTS

March 20, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

JAC 2-2 Unit 15 Source Documentation.pdf
JAC 2-2 Unit 23 Source Documentation.pdf
JAC 2-2 Unit 24 Source Documentation.pdf
JAC 2-2 McGibbon WL Source Documentation.pdf
JAC 2-2 Well 11 Source Documentation.pdf
JAC 2-2 Well 16 Source Documentation.pdf
JAC 2-2 WP No. 1 2nd Tank Source Documentation.pdf
JAC 2-2 WP No. 1 BS Source Documentation.pdf

b) Not Applicable. As noted in Company's response to JAC 2-1, all of the plant used and useful in the provision of water utility service by QCW was built specifically for QCW by an affiliate, Robson Ranch Quail Creek, LLC. None of the plant has ever been owned or placed in service by another entity, including another affiliated "Robson-owned" water/wastewater utility.

c) Not Applicable. None of the plant has ever been owned or placed in service by another entity, including another affiliated "Robson-owned" water/wastewater utility.

d) QCW cannot answer the first part of this data request. All of the assets were built for QCW and then placed in service by QCW before any of current management team was involved in the utility operations. This is how plant was financed for QCW, as well as for other entities like Lago Del Oro Water Company, which recently completed a rate proceeding. See Decision No. 74564 (June 20, 2014).

QCW does not believe this arrangement was adverse to its customers. In essence, the developer, Robson Ranch Quail Creek, LLC, funded the plant, the plant was available to service customers when it was needed, and QCW had full operational control over the

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF's SECOND SET OF DATA REQUESTS

March 20, 2015

Respondent: Ray L. Jones

Title: Consultant

Company: Aricor Water Solutions, LC

Address: 18835 N. Thompson Peak Parkway, Suite 215
Scottsdale, AZ 85255

plant. Moreover, until this case, customers have never been asked to pay a return on or of the capital investment in the plant being used to serve them.

Furthermore, as indicated in the table of deferred plant purchases, QCW has proposed an adjustment to accumulated depreciation to recognize that a portion of the useful lives of the plant items has been consumed prior to being booked by QCW. The proposed accumulated depreciation adjustment follows the procedure adopted in Decision No. 74564 (June 20, 2014) for QCW's affiliate, Lago Del Oro Water Company, which faced the same issue in its recent rate case. The end result from a rate making perspective is that the Company's plant balance, accumulated depreciation balance, net plant balance and rate base are exactly the same as if QCW had purchased and booked the plant on the day that it was placed in service.

In summary, considering the facts in this case and the proposed ratemaking treatment, QCW does not believe that the deferred plant purchases are contrary to the public interest.

**QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF'S THIRD SET OF DATA REQUESTS**

March 30, 2015

Respondent: Chris Sabin
Title: Controller
Company: Quail Creek Water Company, Inc.
Address: 9532 East Riggs Road
Sun Lakes, AZ 85248

Company Response Number: JAC 3-1

- Q. Interest Cost Allocation to Plant – As shown in Mr. Bourassa's B-2 Plant work papers for Well 16, the revised allocation cost of Well 16 includes a \$5,167.05 interest component. In regards to this interest allocation amount, please respond to the following:
- a. Provide a detailed explanation of the \$5,167.05 interest amount allocated to the cost of Well 16;
 - b. Indicate if the interest expense was incurred due to the issuance of debt;
 - c. If so, identify the lender, indicate if long- or short-term debt, and provide a calculation of the \$5,167.05 interest amount showing the interest rate, the outstanding principal balance and the length of time over which interest accrued;
 - d. If short-term debt, indicate the issuance date and the maturity date of the short-term debt instrument;
 - e. If the debt was long-term debt, please state if the debt was authorized by the Commission, and provide all supporting documentation;
 - f. If the \$5,167.05 interest amount is not due to the issuance of debt, please provide the rationale for including an interest cost allocation to plant, and provide all supporting documentation;
 - g. Provide a calculation showing how the \$5,167.05 interest amount was derived by the allocation methodology;
 - h. If the interest amount was AFUDC, provide a calculation with all supporting documentation; and

QUAIL CREEK WATER COMPANY, INC.
DOCKET NOS. W-02514A-14-0343
RESPONSES TO STAFF's THIRD SET OF DATA REQUESTS

March 30, 2015

Respondent: Chris Sabin
Title: Controller
Company: Quail Creek Water Company, Inc.
Address: 9532 East Riggs Road
Sun Lakes, AZ 85248

- i. Indicate if the interest allocation was related to the number of years between the plant "in service year" and the "accounting year."

RESPONSE: After reviewing the allocation of Well 16 costs it has been determined that the capitalized interest allocation in the amount of \$5,167.05 was contrary to established practices. As a policy, the Developer, Robson Ranch Quail Creek, LLC, charges capitalized interest to development projects but does not capitalize interest on utility infrastructure projects to be purchased by Quail Creek Water Company.

This interest allocation resulted from several Well 16 costs that were erroneously recorded to the job for Well 5, a golf course irrigation well which is owned and operated by the Developer. When the Well 16 costs were reclassified to the correct job, a portion of the capitalized interest was also reclassified to the Well 16 job. Since capitalized interest would not normally be charged to a Quail Creek Water Company project, the Company will make an adjustment to remove the capitalized interest from the cost of Well 16 in its rebuttal filing.

BEFORE THE ARIZONA CORPORATION COMMISSION

SUSAN BITTER SMITH

Chairman

BOB STUMP

Commissioner

BOB BURNS

Commissioner

DOUG LITTLE

Commissioner

TOM FORESE

Commissioner

IN THE MATTER OF THE APPLICATION OF)
QUAIL CREEK WATER COMPANY, INC., AN)
ARIZONA CORPORATION, FOR A)
DETERMINATION OF THE FAIR VALUE OF)
ITS UTILITY PLANTS AND PROPERTY AND)
FOR INCREASES IN ITS WATER RATES AND)
CHARGES FOR UTILITY SERVICE BASED)
THEREON.)

DOCKET NO. W-02514A-14-0343

DIRECT TESTIMONY

(COST OF CAPITAL)

OF

JOHN A. CASSIDY

PUBLIC UTILITIES ANALYST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

MAY 6, 2015

TABLE OF CONTENTS

	<u>PAGE</u>
I. INTRODUCTION	1
Summary of Testimony and Recommendations	2
QCW's Proposed Overall Rate of Return	5
II. THE WEIGHTED AVERAGE COST OF CAPITAL	5
III. CAPITAL STRUCTURE	7
Background	7
QCW's Capital Structure	8
Staff's Capital Structure	9
IV. RETURN ON EQUITY	10
Background	10
Risk	13
V. ESTIMATING THE COST OF EQUITY	15
Introduction	15
Discounted Cash Flow Model Analysis	16
The Constant-Growth DCF	17
The Multi-Stage DCF	26
VI. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS	28
VII. FINAL COST OF EQUITY ESTIMATES FOR QCW	29
VIII. RATE OF RETURN RECOMMENDATION	31
IX. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA	31
X. CONCLUSION	40

SCHEDULES

Capital Structure and Weighted Cost of Capital	JAC-1
Intentionally Left Blank	JAC-2
Final Cost of Equity Estimates for Sample Water Utilities	JAC -3
Average Capital Structure of Sample Water Utilities	JAC -4
Growth in Earnings & Dividends of Sample Water Utilities	JAC -5
Sustainable Growth for Sample Water Utilities	JAC -6
Selected Financial Data of Sample Water Utilities	JAC -7
Calculation of Expected Infinite Annual Growth in Dividends	JAC -8
Multi-Stage DCF Estimates	JAC -9

EXECUTIVE SUMMARY
QUAIL CREEK WATER COMPANY, INC.
DOCKET NO. WS-04235A-13-0343

The direct testimony of Staff witness John A. Cassidy addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Quail Creek Water Company, Inc. (“Company”) for this proceeding consisting of 0.0 percent debt and 100.0 percent equity.

Cost of Equity – Staff recommends that the Commission adopt a 9.5 percent cost of equity for the Company. Staff’s estimated cost of equity for the Company is based on the 8.9 percent average of its discounted cash flow method (“DCF”) cost of equity methodology estimates for the sample companies of 8.6 percent for the constant-growth DCF model and 9.1 percent for the multi-stage DCF model. Staff’s recommended cost of equity includes an upward economic assessment adjustment of 60 basis points (0.6 percent).

Cost of Debt – Staff recommends that the Commission adopt a 0.0 percent cost of debt for the Company.

Overall Rate of Return – Staff recommends that the Commission adopt a 9.5 percent overall rate of return.

Mr. Bourassa’s Testimony – The Commission should reject the Company’s proposed 10.0 percent return on equity (“ROE”) for the following reasons:

Mr. Bourassa’s discounted cash flow (“DCF”) model estimates are overstated due to the use of historical stock price appreciation growth as a parameter to measure the dividend growth component in the constant growth DCF model. Mr. Bourassa’s risk premium model (“RPM”) estimates are overstated due to (i) use of a 30-year U.S. Treasury rate, and not a corporate bond yield, in the computation of the MRP component, and (ii) use of a forecasted risk free rate in the computation of the MRP estimated cost of equity. Mr. Bourassa’s capital asset pricing model (“CAPM”) estimates are overstated due to the use of a forecasted risk-free rate. The current market risk premium (“MRP”) in Mr. Bourassa’s current CAPM model improperly incorporate estimates of earnings per share (“EPS”), dividends per share (“DPS”) and book value per share.

1 **I. INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is John A. Cassidy. I am a Public Utilities Analyst employed by the Arizona
4 Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business
5 address is 1200 West Washington Street, Phoenix, Arizona 85007.

6
7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst.**

8 A. I am responsible for the examination of financial and statistical information included in utility
9 rate applications and other financial matters, including studies to estimate the cost of capital
10 component in rate filings used to determine the overall revenue requirement, and for
11 preparing written reports, testimonies and schedules to present Staff's recommendations to
12 the Commission on these matters.

13
14 **Q. Please describe your educational background and professional experience.**

15 A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of
16 Library Science degree from the University of Arizona, and a Master of Business
17 Administration degree with an emphasis in Finance from Arizona State University. While
18 pursuing my MBA degree, I was inducted into Beta Gamma Sigma, the National Business
19 Honor Society. I have passed the CPA exam, but opted not to pursue certification. I have
20 worked professionally as a librarian, financial consultant and tax auditor and served as Staff's
21 cost of capital witness in rate case evidentiary proceedings in my current as well as in a past
22 tenure as a Commission employee. Since returning to the Commission in January 2012, I
23 have filed cost of capital testimony on behalf of Staff in over 20 rate proceedings, and have
24 filed revenue requirement and rate design testimony on behalf of Staff in three rate
25 proceedings. Additionally, I attended the Society of Utility Regulatory Financial Analysts
26 ("SURFA") Forum (April 2013), the National Association of Regulatory Utility

Commissioners ("NARUC") Utility Rate School (May 2013), and the Institute of Public Utilities at Michigan State University Annual Regulatory Studies Program ("Camp NARUC") (August 2014).

Q. What is the scope of your testimony in this case?

A. My testimony provides Staff's recommended capital structure, cost of equity, and overall rate of return ("ROR") for establishing the revenue requirements for Quail Creek Water Company, Inc. ("QCW" or "Company") in the Company's pending water rate application.

Q. Please provide a brief description of QCW.

A. QCW is a Class "B" for-profit public service corporation engaged in the business of providing potable water service in a portion of Pima County, Arizona, pursuant to a certificate of convenience and necessity granted by the Arizona Corporation Commission ("Commission"). During the test year ending December 31, 2013, the Company served approximately 2,011 customers.

Summary of Testimony and Recommendations

Q. Briefly summarize how Staff's cost of capital testimony is organized.

A. Staff's cost of capital testimony is presented in ten sections. Section I is this introduction. Section II discusses the concept of weighted average cost of capital ("WACC"). Section III presents the concept of capital structure and Staff's recommended capital structure for QCW in this proceeding. Section IV discusses the concepts of ROE and risk. Section V presents the methods employed by Staff to estimate QCW's ROE. Section VI presents the findings of Staff's ROE analysis. Section VII presents Staff's final cost of equity estimates for QCW. Section VIII presents Staff's ROR recommendation. Section IX presents Staff's comments

1 on the direct testimony of the Company's witness, Mr. Thomas J. Bourassa. Finally, Section
2 X presents Staff's conclusions.

3
4 **Q. Have you prepared any exhibits to accompany your testimony?**

5 A. Yes. I prepared nine schedules (JAC-1 to JAC-9) which support Staff's cost of capital
6 analysis.

7
8 **Q. What is Staff's recommended rate of return for QCW?**

9 A. Staff recommends a 9.5 percent overall ROR, as shown in Schedule JAC-1. Staff's ROR
10 recommendation is based on the following: (1) a capital structure composed of 0.0 percent
11 debt and 100.0 percent equity; (2) an estimated cost of equity of 8.9 percent, calculated as the
12 simple average of the two cost of equity estimates for the sample companies derived from
13 Staff's discounted cash flow ("DCF") estimation methodologies (8.6 percent from Staff's
14 constant growth DCF model and 9.1 percent from Staff's multi-stage DCF model), plus the
15 adoption of a 60 basis point upward economic assessment adjustment; and (3) a cost of debt
16 of 0.0 percent.

17
18 Staff continues to develop and analyze the indicated cost of equity estimates derived from the
19 two capital asset pricing model ("CAPM") estimation methodologies historically considered
20 and relied upon by Staff. However, at the present time Staff is recommending that the
21 Commission place less emphasis on CAPM results due to the continuing divergence of the
22 CAPM-indicated cost of equity results relative to those derived by the DCF model.
23

1 **Q. Mr. Cassidy, briefly explain why the cost of equity estimates derived from the CAPM**
2 **have become problematic in today's economic environment.**

3 A. In an effort to recover from the economic recession of 2008, the United States Federal
4 Reserve ("The Fed") initiated a monetary policy intended to stimulate economic growth and
5 reduce unemployment by keeping the federal funds rate at a level between 0 to ¼ percent.¹
6 The federal funds rate is the central bank's key tool to spur the economy and a low rate is
7 thought to encourage spending by making it cheaper to borrow money. In addition, in an
8 effort to put downward pressure on longer-term interest rates, the Fed initiated a policy of
9 quantitative easing² wherein the U.S. central bank would purchase U.S. Treasury mortgage-
10 backed securities by reinvesting the principal payments from its holdings of agency debt and
11 agency mortgage-backed securities, and of rolling over maturing Treasury securities at
12 auction.³ As a consequence, the low interest rate environment engineered by the Fed has
13 compelled investors to seek out higher yields on investment wherever they may be found,
14 resulting in the equity markets having recently achieved new all-time highs,⁴ and forecasted
15 dividend yields continuing to remain at low levels.⁵ At present, these factors, in combination
16 with one another, have led to unusually low cost of equity estimates being obtained from the
17 CAPM model. Accordingly, in Staff's judgment the cost of equity estimates derived from the
18 CAPM should not be given their traditional weighting for purposes of setting rates until such
19 time that market conditions change.⁶

¹ The federal funds rate is the interest rate charged to banks by the Fed for overnight transfers of funds.

² Quantitative easing is an unconventional monetary policy in which a central bank purchases government securities or other securities from the market in order to lower interest rates and increase the money supply. Quantitative easing increases the money supply by flooding financial institutions with capital in an effort to promote increased lending and liquidity. Quantitative easing is considered when short-term interest rates are at or approaching zero, and does not involve the printing of new banknotes.

³ In a Press Release issued October 29, 2014, the Fed announced that it would conclude its asset purchase program, thereby putting an end to its use of quantitative easing (i.e., adding to its holdings of agency mortgage-backed securities at a pre-determined monthly rate) as a monetary policy instrument. In making the announcement, the Fed indicated that there had been substantial improvement in the outlook for the labor market since the inception of its current asset purchase program effective program, and that it continued to see sufficient strength in the broader economy to support ongoing progress toward maximum employment in a context of price stability. The Fed indicated, however, that it would maintain its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-

QCW's Proposed Overall Rate of Return

Q. Briefly summarize QCW's proposed capital structure, cost of debt, ROE and overall ROR for this proceeding.

A. Table 1 summarizes the Company's proposed capital structure, cost of debt, ROE and overall ROR in this proceeding:

Table 1

	Weight	Cost	Weighted Cost
Long-term Debt	0.00%	0.00%	0.00%
Common Equity	100.00%	10.00%	10.00%
Cost of Capital/ROR			10.00%

QCW is proposing an overall rate of return of 10.00 percent.

II. THE WEIGHTED AVERAGE COST OF CAPITAL

Q. Briefly explain the cost of capital concept.

A. The cost of capital is the opportunity cost of choosing one investment over others with equivalent risk. In other words, the cost of capital is the return that stakeholders expect for investing their financial resources in a determined business venture over another business venture.

backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. (<http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm>)

⁴ On March 2, 2015, the Dow Jones Industrial Average reached an all-time high (both intra-day and closing) of 18,288.63. Similarly, the S&P 500 Index reached a new all-time closing high of 2,117.69 on April 24, 2015, and an all-time intra-day high of 2,125.92 on April 27, 2015 (Source: Yahoo! Finance).

⁵ As reported in the *Value Line Investment Survey, Summary & Index*, the median estimated dividend yield (next 12 months) of all dividend paying stocks under its review is currently at 2.0 percent (*Value Line*, April 24, 2015 issue).

⁶ Recently, there has been much speculation that the Fed might signal a change in monetary policy. In a press release issued on March 18, 2015, the words, "considerable time," were removed from the guidance provided by the Fed relating to when the central bank might consider raising the federal funds rate from its current target range of 0 to ¼ percent. In making this change to its forward guidance, however, the Federal Reserve Open Market Committee indicated that no decision had been made as to the timing of the initial increase in the target range.

(<http://www.federalreserve.gov/newsevents/press/monetary/20150318a.htm>)

1 **Q. What is the overall cost of capital?**

2 A. The cost of capital to a company issuing a variety of securities (i.e., stock and indebtedness) is
3 an average of the cost rates on all issued securities adjusted to reflect the relative amounts for
4 each security in the company's entire capital structure. Thus, the overall cost of capital to a
5 firm is its weighted average cost of capital ("WACC").

6
7 **Q. How is the WACC calculated?**

8 A. The WACC is calculated by adding the weighted expected returns of a firm's securities. The
9 WACC formula is:

10 Equation 1.

11
12
$$\text{WACC} = \sum_{i=1}^n W_i * r_i$$

13

14 In this equation, W_i is the weight given to the i^{th} security (the proportion of the i^{th} security
15 relative to the portfolio) and r_i is the expected return on the i^{th} security.

16
17 **Q. Can you provide an example demonstrating application of Equation 1?**

18 A. Yes. For this example, assume that an entity has a capital structure composed of 40 percent
19 debt and 60 percent equity. Also, assume that the embedded cost of debt is 5.5 percent and
20 the expected return on equity, i.e., the cost of equity, is 10.0 percent. Calculation of the
21 WACC is as follows:

22
$$\text{WACC} = (40\% * 5.5\%) + (60\% * 10.0\%)$$

23
$$\text{WACC} = 2.20\% + 6.00\%$$

24
$$\text{WACC} = 8.20\%$$

25

The weighted average cost of capital in this example is 8.20 percent. The entity in this example would need to earn an overall rate of return of 8.20 percent to cover its cost of capital.

III. CAPITAL STRUCTURE

Background

Q. Please explain the capital structure concept.

A. The capital structure of a firm is the relative proportions of each type of security: short-term debt, long-term debt (including capital leases), preferred stock and common stock that are used to finance the firm's assets.

Q. How is the capital structure expressed?

A. The capital structure of a company is expressed as the percentage of each component of the capital structure (capital leases, short-term debt, long-term debt, preferred stock and common stock) relative to the entire capital structure.

As an example, the capital structure for an entity that is financed by \$20,000 of short-term debt, \$85,000 of long-term debt (including capital leases), \$15,000 of preferred stock and \$80,000 of common stock is shown in Table 2.

Table 2

Component			%
Short-Term Debt	\$20,000	(\$20,000/\$200,000)	10.0%
Long-Term Debt	\$85,000	(\$85,000/\$200,000)	42.5%
Preferred Stock	\$15,000	(\$15,000/\$200,000)	7.5%
Common Stock	\$80,000	(\$80,000/\$200,000)	40.0%
Total	\$200,000		100%

1 The capital structure in this example is composed of 10.0 percent short-term debt, 42.5
2 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.
3

4 *QCW's Capital Structure*

5 **Q. What capital structure does QCW propose for purposes of this proceeding?**

6 A. The Company proposes a capital structure composed of 0.0 percent debt and 100.0 percent
7 common equity. QCW's proposed capital structure reflects its actual capital structure as of
8 the December 31, 2013 test-year end, as shown in the Company's Schedule
9 D-1.
10

11 **Q. How does QCW's proposed capital structure compare to capital structures of
12 publicly-traded water utilities?**

13 A. Schedule JAC-4 shows the capital structures of seven publicly-traded water companies
14 ("sample water companies" or "sample water utilities") as of December 2013. The average
15 capital structure for the sample water utilities is comprised of approximately 47.6 percent debt
16 and 52.4 percent equity.
17

1 *Staff's Capital Structure*

2 **Q. What is Staff's recommended capital structure for QCW?**

3 A. Staff recommends a capital structure composed of 0.0 percent debt and 100.0 percent equity.
4

5 **Q. Although Staff is recommending a 100.0 percent equity capital structure for the**
6 **Company in this docket, does Staff recommend that QCW be required to rebalance its**
7 **capital structure prior to filing for rates in its next rate case?**

8 A. Yes.
9

10 **Q. What is the basis for Staff's recommendation that the Company be required to**
11 **effectuate a rebalancing of its capital structure prior to filing for its next rate case?**

12 A. Because the cost of debt is less than the cost of equity, and a reduction to the equity
13 component within the Company's capital structure will reduce the overall weighted cost of
14 capital to be recovered in rates. Regulated public utilities are capital intensive and, as such,
15 require significant capital to fund the plant infrastructure necessary to provide service to
16 customers. Exclusive use of equity capital to fund plant infrastructure, however, requires
17 ratepayers to pay a proportionately higher cost of service than if the same plant were funded
18 with a combination of both debt and equity capital. Therefore, Staff's recommendation that
19 QCW be required to rebalance its capital structure prior to the filing of its next rate case is
20 intended to provide a measure of rate relief to customers in the future. It should be noted
21 that, to the extent QCW fails to effectuate a rebalancing of its 100.0 percent equity capital
22 structure prior to the filing of its next rate case, for rate-making purposes Staff is prepared to
23 recommend use of a hypothetical capital structure for the Company.
24
25

1 **Q. To Staff's knowledge, have there been other Robson-owned regulated utilities who**
2 **have effectuated a rebalancing of their capital structures when filing for a rate**
3 **increase with the Commission?**

4 A. Yes, there have been two such recent instances. In 2011, QCW's sister affiliate, Pima Utility
5 Company, effectuated a rebalancing of its capital structure when filing for rates (*See* Docket
6 No. W-02199A-11-0329, et al.), and in 2013 another sister affiliate, Lago Del Oro Water
7 Company, did likewise (*See* Docket No. W-01944A-13-0215). In each of the two above noted
8 dockets the rebalancing of the capital structure was effectuated, in part, by replacing existing
9 equity capital with newly issued debt capital.

10
11 **Q. Did Staff consider recommending a hypothetical capital structure for the Company in**
12 **the instant docket?**

13 A. No, it did not. QCW last filed for a rate increase 16 years ago (the Company's prior rate case
14 used a December 31, 1997 test-year end), and as a consequence the Company has not been
15 afforded the opportunity to earn a return on the investment in plant placed into service since
16 that time. For this reason, Staff did not believe use of a hypothetical capital structure was
17 warranted at this time.

18
19 **IV. RETURN ON EQUITY**

20 *Background*

21 **Q. Please define the term "cost of equity capital."**

22 A. The cost of equity is the rate of return that investors expect to earn on their investment in a
23 business entity given its risk. In other words, the cost of equity to the entity is the investors'
24 expected rate of return on other investments of similar risk. As investors have a wide
25 selection of stocks to choose from, they will choose stocks with similar risks but higher
26 returns. Therefore, the market determines the entity's cost of equity.

1 **Q. Is there a correlation between interest rates and the cost of equity?**

2 A. Yes, there is a positive correlation between interest rates and the cost of equity, as the two
3 tend to move in the same direction.

4
5 **Q. What has been the general trend of interest rates in recent years?**

6 A. A chronological chart of interest rates is a good tool to show interest rate history and identify
7 trends. Chart 1 graphs intermediate U.S. treasury rates from January 7, 2005, to April 24,
8 2015.

10 **Chart 1: Average Yield on 5-, 7-, & 10-Year Treasuries**



11
12
13
14
15
16
17
18
19
20
21
22
23
24 As shown in Chart 1, intermediate-term interest rates generally trended upward from 2005 to
25 mid-2007, trended downward until mid-2012, and have trended upward since that time.

1 **Q. What has been the general trend in interest rates longer term?**

2 A. U.S. Treasury rates from January 1965 - March 2015 are shown in Chart 2. The chart shows
3 that interest rates trended upward through the early- to mid-1980s and have trended
4 downward since that time.



Source: Federal Reserve

21 **Q. Do these trends have relevance to the cost of equity?**

22 A. Yes. As previously noted, interest rates and the cost of equity tend to move in the same
23 direction; therefore, it can be concluded that the cost of equity has also declined over the past
24 30 years.

1 **Q. Do actual returns represent the cost of equity?**

2 A. No. The cost of equity represents investors' *expected* returns and not realized returns.

3

4 *Risk*

5 **Q. Please define risk as it relates to an equity security investment.**

6 A. Risk, as it relates to an equity security investment, is defined as the variability or uncertainty
7 of the returns associated with that particular security. Investors are risk averse and require a
8 greater potential return to invest in relatively greater risk opportunities, i.e., investors require
9 compensation for taking on additional risk. Risk is generally separated into two components:
10 market risk (systematic risk) which is non-diversifiable, and non-market risk (unsystematic
11 risk or firm-specific risk) which is diversifiable.

12

13 **Q. What is market risk?**

14 A. Market risk, or systematic risk, is the risk associated with an investment that cannot be
15 reduced through diversification. Market risk stems from factors that affect all securities, such
16 as recessions, war, inflation and high interest rates. These factors affect the entire market.
17 However, market risk does not impact each security to the same degree.

18

19 **Q. What is non-market risk?**

20 A. Non-market risk, or unsystematic risk, is risk which is unique to the firm and is capable of
21 being diversified away. Examples of unsystematic risk include losses caused by labor
22 problems, nationalization of assets, loss of a big client or adverse weather conditions.
23 Investors can eliminate firm-specific risk by holding a diverse portfolio; thus, it is not of
24 concern to diversified investors.

25

26

1 **Q. Is the cost of equity affected by firm-specific risk?**

2 A. No. Since firm-specific risk can be eliminated through diversification, it does not affect the
3 cost of equity.

4
5 **Q. Can investors expect additional returns for firm-specific risk?**

6 A. No. Investors who hold diversified portfolios can effectively eliminate firm-specific risk and,
7 consequently, do not require any additional return. Since investors who choose to be less
8 than fully-diversified must compete in the market with fully-diversified investors, the former
9 cannot expect to be compensated for unique risk.

10
11 **Q. Is a firm subject to any other risk?**

12 A. Yes. Firms are also subject to business risk and to financial risk.

13
14 **Q. Please define business risk.**

15 A. Business risk is the fluctuation of earnings inherent in a firm's operations and environment,
16 such as competition and adverse economic conditions, which may impair its ability to provide
17 returns on investment. Companies in the same or similar line of business tend to experience
18 the same fluctuations in business cycles.

19
20 **Q. Please define financial risk.**

21 A. Financial risk is the fluctuation of earnings inherent in the use of debt financing that may
22 impair a firm's ability to provide adequate returns; the higher the percentage of debt in a
23 company's capital structure, the greater its exposure to financial risk.

24

1 **Q. Do business risk and financial risk affect the cost of equity?**

2 A. Yes.

3
4 **Q. How does QCW's financial risk exposure compare to that of Staff's sample group of**
5 **water companies?**

6 A. JAC-4 shows the capital structures of the seven sample water companies as of December
7 2013, and QCW's capital structure as of the test year ending December 31, 2013. As shown,
8 the sample water utilities were capitalized with approximately 47.6 percent debt and 52.4
9 percent equity, while QCW's capital structure consists of 0.0 percent debt and 100.0 percent
10 equity. Thus, relative to Staff's sample companies, QCW has no exposure to financial risk
11 because the Company does not utilize debt financing.

12
13 **V. ESTIMATING THE COST OF EQUITY**

14 *Introduction*

15 **Q. Did Staff directly estimate the cost of equity for QCW?**

16 A. No. Since QCW is not a publicly-traded company, Staff is unable to directly estimate its cost
17 of equity due to the lack of firm-specific market data. Instead, Staff estimated the Company's
18 cost of equity indirectly, using a representative sample group of publicly-traded water utilities
19 as a proxy, taking the average of the sample group to reduce the sample error resulting from
20 random fluctuations in the market at the time the information is gathered.

21
22 **Q. What sample companies did Staff select as proxies for QCW?**

23 A. Staff's sample consists of the following seven publicly-traded water utilities: American States
24 Water, California Water, Aqua America, Connecticut Water Service, Middlesex Water, SJW
25 Corporation and York Water. Staff selected these companies because they are publicly-

1 traded, receive the majority of their earnings from regulated operations, have at least ten years
2 of historical market trading data available, and are followed by the *Value Line Investment Survey*.

3
4 **Q. What models did Staff implement to estimate QCW's cost of equity?**

5 A. Staff used two variations of the DCF model, both of which are market-based, to estimate the
6 cost of equity for QCW: the constant-growth DCF model and the multi-stage DCF model.

7
8 **Q. Please explain why Staff chose the DCF model.**

9 A. Staff chose to use the DCF model because it is a widely-recognized market-based model and
10 has been used extensively to estimate the cost of equity. For the reasons noted earlier, Staff
11 does not incorporate estimates derived from the CAPM into its cost of equity analysis for
12 QCW. An explanation of the DCF model is provided below.

13
14 *Discounted Cash Flow Model Analysis*

15 **Q. Please provide a brief summary of the theory upon which the DCF method of**
16 **estimating the cost of equity is based.**

17 A. The DCF method of stock valuation is based on the theory that the value of an investment is
18 equal to the sum of the future cash flows generated from the aforementioned investment
19 discounted to the present time. This method uses expected dividends, market price and
20 dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered the
21 DCF method in the 1960s. The DCF method has become widely used to estimate the cost of
22 equity for public utilities due to its theoretical merit and its simplicity. Staff used the financial
23 information for the relevant seven sample companies in the DCF model and averaged the
24 results to determine an estimated cost of equity for the sample companies.

1 **Q. Does Staff use more than one version of the DCF?**

2 A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF and the multi-
3 stage or non-constant growth DCF. The constant-growth DCF assumes that an entity's
4 dividends will grow indefinitely at the same rate. The multi-stage growth DCF model
5 assumes the dividend growth rate will change at some point in the future.

6
7 *The Constant-Growth DCF*

8 **Q. What is the mathematical formula used in Staff's constant-growth DCF analysis?**

9 A. The constant-growth DCF formula used in Staff's analysis is:
10

Equation 2 :

$$K = \frac{D_1}{P_0} + g$$

where : K = the cost of equity
 D_1 = the expected annual dividend
 P_0 = the current stock price
 g = the expected infinite annual growth rate of dividends

11
12 Equation 2 assumes that the entity has a constant earnings retention rate and that its earnings
13 are expected to grow at a constant rate. According to Equation 2, a stock with a current
14 market price of \$10 per share, an expected annual dividend of \$0.45 per share and an
15 expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity of 7.5
16 percent reflected by the sum of the dividend yield ($\$0.45 / \$10 = 4.5$ percent) and the 3.0
17 percent annual dividend growth rate.
18
19

1 **Q. How did Staff calculate the expected dividend yield (D_1/P_0) component of the**
2 **constant-growth DCF formula?**

3 A. Staff calculated the expected yield component of the DCF formula by dividing the expected
4 annual dividend (D_1) by the spot stock price (P_0) after the close of market on April 1, 2015, as
5 reported by *MSN Money*.
6

7 **Q. Why did Staff use the April 1, 2015, spot price rather than a historical average stock**
8 **price to calculate the dividend yield component of the DCF formula?**

9 A. The current, rather than historic, market price is used in order to be consistent with financial
10 theory. In accordance with the Efficient Market Hypothesis, the current stock price is
11 reflective of all available information on a stock, and as such reveals investors' expectations of
12 future returns.
13

14 **Q. How did Staff estimate the dividend growth (g) component of the constant-growth**
15 **DCF model represented by Equation 2?**

16 A. The dividend growth component used by Staff is determined by the average of six different
17 estimation methods, as shown in Schedule JAC-8. Staff calculated historical and projected
18 growth estimates on dividend-per-share ("DPS"),⁷ earnings-per-share ("EPS")⁸ and
19 sustainable growth bases.
20

21 **Q. Why did Staff examine EPS growth to estimate the dividend growth component of the**
22 **constant-growth DCF model?**

23 A. Historic and projected EPS growth are used because dividends are related to earnings.
24 Dividend distributions may exceed earnings in the short run, but cannot continue indefinitely.
25 In the long term, dividend distributions are dependent on earnings.

⁷ Derived from information provided by *Value Line*.

⁸ Derived from information provided by *Value Line*.

1 **Q. How did Staff estimate historical DPS growth?**

2 A. Staff estimated historical DPS growth by calculating a compound annual DPS growth rate for
3 each of its sample companies over the 10-year period, 2004-2013. As shown in Schedule
4 JAC-5, the average historical DPS growth rate for the sample was 3.7 percent.

5
6 **Q. How did Staff estimate projected DPS growth?**

7 A. Staff calculated an average of the projected DPS growth rates for the sample water utilities
8 from *Value Line* through the period, 2017-2019. The average projected DPS growth rate is
9 6.4 percent, as shown in Schedule JAC-5.

10

11 **Q. How did Staff estimate historical EPS growth rate?**

12 A. Staff estimated historical EPS growth by calculating a compound annual EPS growth rate for
13 each of its sample companies over the 10-year period, 2004-2013. As shown in Schedule
14 JAC-5, the average historical EPS growth rate for the sample was 6.5 percent.

15

16 **Q. How did Staff estimate projected EPS growth?**

17 A. Staff calculated an average of the projected EPS growth rates for the sample water utilities
18 from *Value Line* through the period, 2017-2019. The average projected EPS growth rate is
19 6.5 percent, as shown in Schedule JAC-5.

20

21 **Q. How does Staff calculate its historical and projected sustainable growth rates?**

22 A. Historical and projected sustainable growth rates are calculated by adding their respective
23 retention growth rate terms (br) to their respective stock financing growth rate terms (vs), as
24 shown in Schedule JAC-6.

25

1 **Q. What is retention growth?**

2 A. Retention growth is the growth in dividends due to the retention of earnings. The retention
3 growth concept is based on the theory that dividend growth cannot be achieved unless the
4 company retains and reinvests a portion of its earnings. The retention growth is used in
5 Staff's calculation of sustainable growth shown in Schedule JAC-6.

6
7 **Q. What is the formula for the retention growth rate?**

8 A. The retention growth rate is the product of the retention ratio and the book/accounting
9 return on equity. The retention growth rate formula is:

10

Equation 3 :

$$\text{Retention Growth Rate} = br$$

where : b = the retention ratio (1 – dividend payout ratio)

r = the accounting/book return on common equity

11

12 **Q. How did Staff calculate the average historical retention growth rate (br) for the**
13 **sample water utilities?**

14 A. Staff calculated the mean of the 10-year average historical retention rate for each sample
15 company over the period, 2004-2013. As shown in Schedule JAC-6, the historical average
16 retention (br) growth rate for the sample is 2.8 percent.

17

18 **Q. How did Staff estimate its projected retention growth rate (br) for the sample water**
19 **utilities?**

20 A. Staff used the retention growth projections for the sample water utilities for the period, 2017-
21 2019, from *Value Line*. As shown in Schedule JAC-6, the projected average retention growth
22 rate for the sample companies is 4.3 percent.

1 **Q. When can retention growth provide a reasonable estimate of future dividend growth?**

2 A. The retention growth rate is a reasonable estimate of future dividend growth when the
3 retention ratio is reasonably constant and the entity's market price to book value ("market-to-
4 book ratio") is expected to be 1.0. The average retention ratio has been reasonably constant
5 in recent years. However, the market-to-book ratio for the sample water utilities is 2.4,
6 notably higher than 1.0, as shown in Schedule JAC-7.

7
8 **Q. Is there any financial implication of a market-to-book ratio greater than 1.0?**

9 A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to earn
10 an accounting/book return on its equity that exceeds its cost of equity. The relationship
11 between required returns and expected cash flows is readily observed in the fixed securities
12 market. For example, assume an entity contemplating issuance of bonds with a face value of
13 \$10 million at either 6 percent or 8 percent and, thus, paying annual interest of \$600,000 or
14 \$800,000, respectively. Regardless of investors' required return on similar bonds, investors
15 will be willing to pay more for the bonds if issued at 8 percent than if the bonds are issued at
16 6 percent. For example, if the current interest rate required by investors is 6 percent, then
17 they would bid \$10 million for the 6 percent bonds and more than \$10 million for the 8
18 percent bonds. Similarly, if equity investors require a 9 percent return and expect an entity to
19 earn accounting/book returns of 13 percent, the market will bid up the price of the entity's
20 stock to provide the required return of 9 percent.

21
22 **Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of**
23 **equity analyses in recent years?**

24 A. Staff has assumed that investors expect the market-to-book ratio to remain greater than 1.0.
25 Given that assumption, Staff has added a stock financing growth rate (vs) term to the
26 retention ratio (br) term to calculate its historical and projected sustainable growth rates.

1 **Q. Do the historical and projected sustainable growth rates Staff uses to develop its DCF**
2 **cost of equity in this case continue to include a stock financing growth rate term?**

3 A. Yes.

4
5 **Q. What is stock financing growth?**

6 A. Stock financing growth is the increase in an entity's dividends attributable to the sale of stock
7 by that entity. Stock financing growth is a concept derived by Myron Gordon and discussed
8 in his book *The Cost of Capital to a Public Utility*.⁹ Stock financing growth is the product of the
9 fraction of the funds raised from the sale of stock that accrues to existing shareholders (v)
10 and the fraction resulting from dividing the funds raised from the sale of stock by the existing
11 common equity (s).
12

13 **Q. What is the mathematical formula for the stock financing growth rate?**

14 A. The mathematical formula for stock financing growth is:

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where: v = Fraction of the funds raised from the sale of stock that accrues
to existing shareholders

s = Funds raised from the sale of stock as a fraction of the existing
common equity

15
16 **Q. How is the variable v presented above calculated?**

17 A. Variable v is calculated as follows:
18

⁹ Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974, pp. 31-35.

Equation 5:

$$v = 1 - \left(\frac{\text{book value}}{\text{market value}} \right)$$

For example, assume that a share of stock has a \$30 book value and is selling for \$45. Then, to find the value of v , the formula is applied:

$$v = 1 - \left(\frac{30}{45} \right)$$

In this example, v is equal to 0.33.

Q. How is the variable s presented above calculated?

A. Variable s is calculated as follows:

Equation 6:

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

For example, assume that an entity has \$150 in existing equity, and it sells \$30 of stock.

Then, to find the value of s , the formula is applied:

$$s = \left(\frac{30}{150} \right)$$

In this example, s is equal to 20.0 percent.

Q. What is the vs term when the market-to-book ratio is equal to 1.0?

A. A market-to-book ratio of 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment equal to the cost of equity. When the

1 market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the
2 entity accrues to the benefit of existing shareholders, i.e., the term v is equal to zero (0.0).
3 Consequently, the vs term is also equal to zero (0.0). When stock financing growth is zero,
4 dividend growth depends solely on the br term.

5
6 **Q. What is the effect of the vs term when the market-to-book ratio is greater than 1.0?**

7 A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a
8 book/accounting return on their equity investment greater than the cost of equity. Equation
9 5 shows that, when the market-to-book ratio is greater than 1.0, the v term is also greater than
10 zero. The excess by which new shares are issued and sold over book value per share of
11 outstanding stock is a contribution that accrues to existing stockholders in the form of a
12 higher book value. The resulting higher book value leads to higher expected earnings and
13 dividends. Continued growth from the vs term is dependent upon the continued issuance and
14 sale of additional shares at a price that exceeds book value per share.

15
16 **Q. What vs estimate did Staff calculate from its analysis of the sample water utilities?**

17 A. Staff estimated an average stock financing growth of 2.7 percent for the sample water utilities,
18 as shown in Schedule JAC-6.

19
20 **Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result of**
21 **investors expecting earnings to exceed its cost of equity, and subsequently**
22 **experienced newly-authorized rates equal only to its cost of equity?**

23 A. Holding all other factors constant, one would expect market forces to move the company's
24 stock price lower, closer to a market-to-book ratio of 1.0, to reflect investor expectations of
25 reduced expected future cash flows.

26

1 **Q. If the average market-to-book ratio of Staff's sample water utilities were to fall to 1.0**
2 **due to authorized ROEs equaling their cost of equity, would inclusion of the *vs* term**
3 **be necessary to Staff's constant-growth DCF analysis?**

4 A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds
5 raised from the sale of stock by the entity accrues to the benefit of existing shareholders
6 because the *v* term equals to zero and, consequently, the *vs* term also equals zero. When the
7 market-to-book ratio equals 1.0, dividend growth depends solely on the *br* term. Staff's
8 inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed 1.0 and
9 that the water utilities will continue to issue and sell stock at prices above book value with the
10 effect of benefitting existing shareholders.

11
12 **Q. What are Staff's historical and projected sustainable growth rates?**

13 A. Staff's estimated historical sustainable growth rate is 5.5 percent based on an analysis of
14 earnings retention for the sample water companies. Staff's projected sustainable growth rate
15 is 7.0 percent based on retention growth projected by *Value Line*. Schedule JAC-6 presents
16 Staff's estimates of the sustainable growth rate.

17
18 **Q. What is Staff's expected infinite annual growth rate in dividends?**

19 A. Staff's expected dividend growth rate (*g*) is 5.9 percent, which is the average of historical and
20 projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the expected
21 infinite annual growth rate in dividends is shown in Schedule JAC-8.

22
23 **Q. What is Staff's constant-growth DCF estimate for the sample utilities?**

24 A. Staff's constant-growth DCF estimate is 8.6 percent, as shown in Schedule JAC-3.

25
26

The Multi-Stage DCF

Q. Why did Staff implement the multi-stage DCF model to estimate QCW's cost of equity?

A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends may not grow at a constant rate. The multi-stage DCF uses two stages of growth; the first stage (near-term) has a duration of four years, followed by a second stage (long-term) of constant growth.

Q. What is the mathematical formula for the multi-stage DCF?

A. The multi-stage DCF formula is shown in the following equation:

Equation 7 :

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n} \left[\frac{1}{(1+K)} \right]^n$$

Where: P_0 = current stock price

D_t = dividends expected during stage 1

K = cost of equity

n = years of non - constant growth

D_n = dividend expected in year n

g_n = constant rate of growth expected after year n

Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?

A. First, Staff projected future dividends for each of the sample water utilities using near-term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which equates the present value of the forecasted dividends to the current stock price for each of the sample water utilities. Lastly, Staff calculated an overall sample average cost of equity estimate.

1 **Q. How did Staff calculate near-term (stage-1) growth?**

2 A. The stage-1 growth rate is based on *Value Line's* projected dividends for the next twelve
3 months, when available, and on the average dividend growth (g) rate of 5.9 percent, calculated
4 in Staff's constant DCF analysis for the remainder of the stage.

5
6 **Q. How did Staff estimate long-term (stage-2) growth?**

7 A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in Gross
8 Domestic Product ("GDP") from 1929 to 2013.¹⁰ Using the GDP growth rate assumes that
9 the water utility industry is expected to grow at the same rate as the overall economy.

10

11 **Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?**

12 A. Staff used 6.5 percent to estimate the stage-2 growth rate.

13

14 **Q. What is Staff's multi-stage DCF estimate for the sample utilities?**

15 A. Staff's multi-stage DCF estimate is 9.1 percent, as shown in Schedule JAC-3.

16

17 **Q. What is Staff's overall DCF estimate for the sample utilities?**

18 A. Staff's overall DCF estimate is 8.9 percent. Staff calculated the overall DCF estimate by
19 averaging the constant growth DCF (8.6%) and multi-stage DCF (9.1%) estimates, as shown
20 in Schedule JAC-3.

21

¹⁰ www.bea.doc.gov.

VI. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS

Q. What is the result of Staff's constant-growth DCF analysis to estimate the cost of equity for the sample water utilities?

A. Schedule JAC-3 shows the result of Staff's constant-growth DCF analysis. The result of Staff's constant-growth DCF analysis is as follows:

$$k = 2.7\% + 5.9\%$$

$$k = 8.6\%$$

Staff's constant-growth DCF estimate of the cost of equity for the sample water utilities is 8.6 percent.

Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JAC-9 shows the result of Staff's multi-stage DCF analysis. The result of Staff's multi-stage DCF analysis is:

Company	Equity Cost Estimate (k)
American States Water	8.6%
California Water	9.2%
Aqua America	8.9%
Connecticut Water	9.2%
Middlesex Water	9.9%
SJW Corp	9.0%
York Water	<u>8.9%</u>
Average	9.1%

Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.1 percent.

1 **Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?**

2 A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 8.9 percent. Staff
3 calculated an overall DCF cost of equity estimate by averaging Staff's constant growth DCF
4 (8.6 percent) and Staff's multi-stage DCF (9.1 percent) estimates, as shown in Schedule JAC-
5 3.

6
7 **VII. FINAL COST OF EQUITY ESTIMATES FOR QCW**

8 **Q. Please compare QCW's capital structure to that of Staff's seven sample companies.**

9 A. The average capital structure for the sample water utilities is composed of 47.6 percent debt
10 and 52.4 percent equity, as shown in Schedule JAC-4. In contrast, QCW's capital structure is
11 composed of 0.0 percent debt and 100.0 percent equity. Thus, unlike the sample companies,
12 QCW shareholders have no exposure to financial risk due to the absence of fixed cost debt
13 financing in the Company's capital structure.

14
15 **Q. Is Staff recommending a downward financial risk adjustment to the Company's cost
16 of equity to recognize its lower financial risk?**

17 A. No. Staff normally applies two criteria in assessing whether application of a downward
18 financial risk adjustment is appropriate. The first consideration is whether the utility has a
19 reasonably economical capital structure. Staff considers a capital structure composed of no
20 more than 60 percent equity to meet this condition. If equity exceeds 60 percent, as it does
21 for QCW, Staff considers application of a downward financial risk adjustment to be
22 appropriate if the utility meets the second criteria. The second condition is whether the utility
23 has access to the capital markets. For non-publicly traded entities, access to the capital
24 markets typically requires that the firm obtain an investment grade credit rating, or to be
25 affiliated (i.e., operating subsidiary) with a parent company having such. In the instant
26 docket, QCW does not meet this condition; thus, despite QCW's equity exceeding 60 percent,

1 Staff is not recommending a downward financial risk adjustment to the Company's cost of
2 equity. Staff's methodology for applying a downward financial risk adjustment encourages a
3 utility with access to the capital markets to use that access to manage its capital structure with
4 economic efficiency and encourages a utility that lacks access to the capital markets to
5 maintain a healthy capital structure.

6
7 **Q. Does Staff recommend that, prior to filing its next rate case, QCW be required to**
8 **effectuate a rebalancing of the Company's equity rich capital structure?**

9 A. Yes. For the reasons noted earlier, Staff recommends that QCW be required to effectuate a
10 rebalancing of its capital structure prior to filing its next rate case.

11
12 **Q. Did Staff consider factors other than the results of its technical models in its cost of**
13 **equity analysis?**

14 A. Yes. In consideration of the relatively uncertain status of the economy and the market that
15 currently exists, Staff is proposing an upward economic assessment adjustment to the cost of
16 equity. In this case, Staff recommends a 60 basis point (0.6 percent) upward economic
17 assessment adjustment, as shown in Schedule JAC-3.

18
19 **Q. What is Staff's recommended cost of equity for QCW?**

20 A. Staff recommends a cost of equity of 9.5 percent for QCW, based on cost of equity estimates
21 for the sample companies of 8.6 percent for the constant-growth DCF model and 9.1 percent
22 for the multi-stage DCF model. Staff recommends adoption of a 60 basis point upward
23 economic assessment adjustment resulting in a 9.5 percent Staff-recommended cost of equity,
24 as shown in Schedule JAC-3.

25
26

VIII. RATE OF RETURN RECOMMENDATION

Q. What overall rate of return did Staff determine for QCW?

A. Staff determined a 9.5 percent ROR for the Company, as shown in Schedule JAC-1 and the following table:

Table 3			
	Weight	Cost	Weighted Cost
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	9.5%	<u>9.5%</u>
Overall ROR			<u>9.5%</u>

IX. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA

Q. Please summarize Mr. Bourassa's analyses and recommendations.

A. Mr. Bourassa recommends a 10.0 percent cost of equity based on estimates derived from two constant growth Discounted Cash Flow ("DCF") models, one Risk Premium Model ("RPM"), and two Capital Asset Pricing Model ("CAPM") analyses, using a proxy sample of seven publicly-traded water companies. He proposes a capital structure consisting of 0.00 percent debt and 100.00 percent equity. Based upon the results of his cost of equity analyses, Mr. Bourassa determined that the cost of equity for his publicly traded sample water utilities lied within the range of 9.4 percent to 10.8 percent, with the mid-point of this range being 10.1 percent. To this 10.1 percent mid-point cost of equity estimate, Mr. Bourassa arrived at his recommended 10.0 percent cost of equity estimate for the Company by making an upward 50 basis point (0.5 percent) adjustment for QCW's small size relative to the sample companies, and a downward Hamada financial risk adjustment of 60 basis points (0.6 percent) to give recognition to QCW's equity rich capital structure (10.1 percent + 0.5 percent - 0.6 percent = 10.0 percent).

1 For purposes of his constant growth DCF analyses, Mr. Bourassa derived (i) a 9.61 percent
2 cost of equity estimate using *Value Line* projected EPS growth forecasts to estimate the
3 dividend growth (g) component (See TJB Schedule D-4.7, Page 1), and (ii) a 9.42 percent cost
4 of equity estimate based upon an average of historical and forecasted measures of dividend
5 growth (See TJB Schedule D-4.7, Page 2). The historical growth parameters utilized by Mr.
6 Bourassa in his past and future DCF analysis include growth in share price appreciation, book
7 value, EPS, and DPS. As shown in Mr. Bourassa's summary Schedule D-4.1, these two DCF
8 estimates are reported as 9.6 percent and 9.4 percent. In each of his two constant growth
9 DCF models, Mr. Bourassa uses a spot market stock price to compute the current dividend
10 yield (D_0/P_0). However, as reported in TJB Schedule D-4.6, the spot price date is reported to
11 be September 5, 2014, a date which conflicts with the June 13, 2014 spot price date noted in
12 Mr. Bourassa's direct testimony.¹¹

13
14 In his RPM analysis, Mr. Bourassa obtains an equity risk premium of 6.0 percent for his
15 sample companies computed as the spread between average annual total realized market
16 returns for his proxy group of companies over the 15-year period, 1999-2013, less the average
17 annual yield on long-term U.S. Treasury securities over this same period of time. To this 6.0
18 percent equity risk premium, Mr. Bourassa adds a 4.6 percent forecasted U.S. Treasury Bond
19 rate based, in part, upon estimates from Value Line and Blue Chip Consensus Forecasts
20 covering the period, 2016-2018 (See TJB Schedule D-4.8).¹² Based upon these calculations,
21 Mr. Bourassa derived a RPM estimated cost of equity of 10.6 percent (6.0 percent + 4.6
22 percent = 10.6 percent) (See TJB Schedule D-4.9).

23
24 In his CAPM analyses, Mr. Bourassa presents estimates based upon both historical and
25 current market risk premia. For purposes of his historical market risk premium CAPM, Mr.

¹¹ See Bourassa Direct, page 26, lines 6-7.

¹² See Bourassa Direct, page 29, lines 9-10.

1 Bourassa utilizes inputs from *Duff and Phelps* to obtain an average market risk (RP_M) premium
2 of 6.96 percent on the Standard & Poor's 500 ("S&P 500") index over the period 1926-2013.
3 He then multiplies this figure by his 0.71 sample average beta coefficient, and to that quantity
4 adds a 4.60 percent forecasted risk free (R_f) rate, deriving a 9.5 percent historical MRP CAPM
5 estimated cost of equity (See TJB Schedule D-4.11). For purposes of his current market risk
6 premium CAPM, Mr. Bourassa utilizes inputs from the DCF model to compute an expected
7 market (k) return. In making this calculation, Mr. Bourassa began by calculating a 9.44
8 percent dividend growth (g) rate utilizing median 3-5 year projected growth estimates for
9 EPS, DPS and book value per share for the universe of 1700 stocks covered by *Value Line*.
10 To this number he added a recent 3-month average (i.e., June-August, 2014) expected
11 dividend yield (D_1/P_0) of 2.61 percent for his sample companies, obtaining an expected
12 market (k) return of 12.05 percent (2.61 percent + 9.44 percent = 12.05 percent). Mr.
13 Bourassa then utilized a 3-month average measure of the **current** 30-year U.S. Treasury rate
14 (3.32 percent) as the risk free (R_f) rate to compute the MRP component. In doing so, he
15 obtained an expected current MRP of 8.73 percent, a figure derived by reducing the 12.05
16 expected market (k) return by the risk free (R_f) rate (12.05 percent - 3.32 percent = 8.73
17 percent) (See TJB Schedule D-4.10). Finally, Mr. Bourassa derived a 10.8 percent current
18 MRP CAPM cost of equity estimate by multiplying the MRP component by his 0.71 sample
19 average beta coefficient, and to that quantity added a **forecasted** risk free (R_f) rate of 4.6
20 percent (See TJB Schedule D-4.11).¹³
21

¹³ This is the same forecasted 4.6 percent risk free rate used in his RPM analysis (See Bourassa Direct, page 33, lines 17-20).

1 **Q. As noted in direct testimony,¹⁴ Mr. Bourassa utilizes a proxy group of seven sample**
2 **companies. When reviewing Mr. Bourassa's schedules, did Staff find that the**
3 **information provided for one of his sample companies, American States Water**
4 **(AWR), was incorrectly identified as American Water Works (AWK)?**

5 **A.** Yes. A review of Mr. Bourassa's Schedules D-4.2, D-4.3, D-4.4, D-4.5, D-4.6 and D-4.7
6 suggests that he utilized American Water Works (AWK), and not American States Water
7 (AWR), as one of his seven proxy companies. However, in reviewing Mr. Bourassa's cost of
8 capital work papers, Staff determined that the market data provided by Mr. Bourassa in the
9 above noted schedules properly pertained to American States Water, and not to American
10 Water Works.

11
12
13 **Q. Does Staff have any comment on Mr. Bourassa's use of growth in average annual**
14 **share price to estimate the expected dividend growth (g) component in the constant**
15 **growth DCF model?**

16 **A.** Yes. Staff would point out that as presented in both Mr. Bourassa's five- and ten-year
17 historical growth DCF analyses, share price growth exceeded that of dividend growth by a
18 wide margin. Specifically, in his five-year historical growth analysis (See TJB Schedule D-4.4)
19 average share price growth (9.43 percent) exceeds average DPS growth (3.50 percent) by
20 169.43 percent ($((.0943/.0350) - 1) = 1.6943$), and in his ten-year historical growth analysis
21 (See TJB Schedule D-4.5) average share price growth (9.35 percent) exceeds average DPS
22 growth (3.50 percent) by 167.14 percent ($((.0935/.0350) - 1) = 1.6714$). Thus, share price
23 appreciation is not a determinant of dividend growth, and for this reason Staff considers its
24 use as a growth parameter to be inappropriate in the DCF model.

¹⁴ See Bourassa Direct, page 11, lines 24-26.

1 **Q. As it relates to the cost of equity, what is the significance of Mr. Bourassa's sample**
2 **water companies having experienced share price growth in excess of DPS growth over**
3 **both the last five- and ten-year periods?**

4 A. Simply stated, it is an indication that the cost of equity for publicly-traded water utilities has
5 fallen over each of the last 5- and 10-year periods. When the market price per share of
6 common stock for a given firm rises faster than does the dividend paid on a per share basis,
7 the dividend yield falls. As dividend yields fall, investors pay more for an equivalent unit of
8 return on their investment, resulting in a lower cost of equity. Markets are efficient, and
9 because prices for publicly traded stocks can rise only if investors are willing to bid up the
10 share price, when share price growth exceeds DPS growth over a five- or ten-year period, the
11 willingness of investors to continue to bid up share prices is reflective of investor
12 expectations that market returns have fallen. Thus, Mr. Bourassa's use of share price growth
13 increases his cost of equity estimate at a time when share price growth actually reflects a
14 decrease in the market cost of equity. This incongruous outcome is the result of choosing an
15 inappropriate parameter for dividend growth in the DCF model.

16
17 **Q. Does this suggest that Mr. Bourassa's DCF cost of equity estimates have been**
18 **overstated by use of share price appreciation as a growth parameter to measure the**
19 **dividend growth (g) rate in the constant growth DCF model?**

20 A. Yes. For purposes of his analysis, Mr. Bourassa incorporates the 5-year measures of historical
21 growth depicted in TJB Schedule D-4.4 into his DCF analysis. As shown in column [5] of
22 that schedule, Mr. Bourassa's estimated 6.14 percent average historical dividend growth rate
23 represents an average of the estimates shown in columns [1] through [4]. Staff determined
24 that if the 9.43 percent growth estimate for share price appreciation was *excluded* from the

1 computation of the 5-year historical average appearing in column [5], an average based upon
2 the individual estimates appearing in column's [2] through [4] for each sample company (i.e.,
3 growth in book value, EPS and DPS) would result in Mr. Bourassa's historical average falling
4 from 6.14 percent to 5.02 percent, a difference of 112 basis points. Do I include a Staff
5 Exhibit restating TJB Schedule D-4.4 to show this?
6

7 **Q. Turning to Mr. Bourassa's RPM analysis, does Staff believe that Mr. Bourassa's**
8 **methodology serves to overstate his 10.6 percent RPM derived cost of equity?**

9 A. Yes, and for two reasons. First, for purposes of his analysis Mr. Bourassa improperly utilizes
10 a 30-year U.S. Treasury yield to estimate the equity risk premium component of his RPM
11 model. Long-term U.S. Treasury debt instruments are commonly used as a proxy for the risk
12 free (R_f) rate in the CAPM because they are free of default risk. In order to compute what
13 might be considered a "market-based" measure of the equity risk premium, Mr. Bourassa
14 should properly have used the yield on a market based corporate debt instrument. Second,
15 Mr. Bourassa's use of a forecasted 4.6 percent 30-year U.S. Treasury rate in the computation
16 of his RPM cost of equity estimate was improper. Instead, he should have used the current
17 30-year U.S. Treasury rate currently borne by investors in the marketplace. As of Staff's April
18 1, 2015 spot-price date, the yield on the 30-year U.S. Treasury Bond was 2.47 percent, a figure
19 213 basis points *lower* than the forecasted 4.6 percent rate used by Mr. Bourassa in his RPM
20 analysis (.046 - .257 = .0213).

1 **Q. Turning to Mr. Bourassa's CAPM analyses, does Staff believe that use of EPS and**
2 **DPS growth estimates are appropriate as inputs to be used in the computation of the**
3 **MRP component in the current MRP CAPM model?**

4 A. No. The CAPM is a single holding period model,¹⁵ and as such the appropriate growth
5 inputs to be used in the computation of the MRP component of the current MRP CAPM are
6 those which might reasonably be expected to reflect investor's holding period returns over
7 the next 3-5 years. In contrast, EPS and DPS growth estimates are appropriate inputs to be
8 used in the DCF model, as DCF cost of equity estimates are obtained by discounting
9 anticipated future cash flows (i.e., dividend distributions) into perpetuity. Mr. Bourassa's use
10 of EPS and DPS as inputs in the current MRP CAPM model appear to be self-serving at this
11 time, for given the strength of the equity markets over the last several years,¹⁶ the DPS and
12 EPS growth estimates utilized in Mr. Bourassa's current MRP CAPM are not reflective of
13 *current* market conditions.
14

15 **Q. Does Staff believe it is proper for Mr. Bourassa to use a forecasted risk-free (R_F)**
16 **interest rate in his CAPM analyses?**

17 A. No. The appropriate risk-free interest rate to be used in the CAPM model is the current rate
18 borne by investors in the market. Use of a forecasted risk-free rate serves to overstate the
19 estimated market cost of equity.
20
21
22

¹⁵ The CAPM makes the following assumptions: 1) single holding period; 2) perfect and competitive securities market; 3) no transaction costs; 4) no restrictions on short selling or borrowing; 5) the existence of a risk-free rate; and 6) homogeneous expectations.

¹⁶ See Cassidy Direct, p. 4, footnote 4.

1 **Q. Please comment on Mr. Bourassa's use of a current measure of the risk free rate when**
2 **computing the market risk premium component of the current MRP CAPM, and a**
3 **forecasted risk free rate when computing his overall current MRP CAPM cost of**
4 **equity.**

5 A. As shown in TJB Schedules D-4.10 and D-4.11, Mr. Bourassa uses two different risk free
6 rates in his current MRP CAPM: a 3.32 percent 30-year U.S. Treasury yield as the risk-free
7 (R_f) rate in the computation of his 8.73 percent current MRP, and a 4.6 percent forecasted
8 risk free rate in the computation of his 10.8 percent current MRP CAPM cost of equity. By
9 so doing, he maximizes the value of the MRP component by using the *lower* current risk free
10 rate, and maximizes the estimated current MRP CAPM cost of equity by using the *higher*
11 forecasted risk free rate. As noted earlier, Staff believes that the current risk free rate should
12 be used at all times in the CAPM equation, and by failing to do so, Mr. Bourassa has
13 overstated his current MRP CAPM estimate by 128 basis points, a figure equivalent to the
14 difference between the two risk free rates he uses ($.0460 - .0332 = .0128$).

15
16 **Q. Does Staff agree with Mr. Bourassa that an adjustment for small size is necessary**
17 **when setting rates for a regulated public utility?**

18 A. No. Annie Wong, of Western Connecticut State University, conducted a study on utility
19 stocks to determine if the so-called size effect exists in the utility industry, and she writes as
20 follows:

21 The fact that the two samples show different, though weak, results indicates
22 that utility and industrial stocks do not share the same characteristics. First,
23 given firm size, utility stocks are consistently less risky than industrial stocks.
24 Second, industrial betas tend to decrease with firm size but utility betas do
25 not. These findings may be attributed to the fact that all public utilities
26 operate in an environment with regional monopolistic power and regulated
27 financial structure. As a result, the business and financial risks are very

1 similar among the utilities regardless of their size. Therefore, utility betas
2 would not necessarily be expected to be related to firm size.
3

4
5 The object of this study is to examine if the size effect exists in the utility
6 industry. After controlling for equity values, there is some weak evidence
7 that firm size is a missing factor from the CAPM for the industrial but not
8 for the utility stocks. *This implies that although the size phenomenon has been strongly*
9 *documented for industrials, the findings suggest that there is no need to adjust for the firm*
10 *size in utility regulations.* [emphasis added].¹⁷
11

12 To underscore this point, Paschall and Hawkins write as follows:

13 A size premium does not automatically apply in every case. Each privately
14 held company should be analyzed to determine if a size premium is
15 appropriate in its particular case. There can be unusual circumstances where
16 a small company has risk characteristics that make it far less risky than the
17 average company, warranting the use of a very low equity risk premium. One
18 possible example of this is a private water utility (monopoly situation, very
19 low risk, near-guarantee of payments).¹⁸
20

21 **Q. Has the Commission previously ruled on the issue of firm size and whether it**
22 **warrants a risk premium adjustment to the cost of equity?**
23

24 **A.** Yes. The Commission previously ruled in Decision No. 64282¹⁹ for Arizona Water that firm
25 size does not warrant recognition of a risk premium stating, "We do not agree with the
26 Company's proposal to assign a risk premium to Arizona Water based on its size relative to
27 other publicly traded water utilities...." The Commission confirmed its previous ruling in
28 Decision No. 64727²⁰ for Black Mountain Gas agreeing with Staff that "the 'firm size
29 phenomenon' does not exist for regulated utilities, and that therefore there is no need to
30 adjust for risk for small firm size in utility regulation." All companies have firm-specific risks;

¹⁷ Annie Wong, "Utility Stock and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association*, (1993), p.98.

¹⁸ Michael A. Paschall and George B. Hawkins, "Do Smaller Companies Warrant a Higher Discount Rate for Risk?: The 'Size Effect' Debate," *CCH Business Valuation Alert*, Vol. 1, Issue No. 2, December 1999.

¹⁹ Dated December 28, 2001.

²⁰ Dated April 17, 2002.

1 therefore, the existence of unique risks for a company does not lead to the conclusion that its
2 total risk is greater than other entities. Moreover, as previously discussed, investors cannot
3 expect compensation for firm-specific risk since it can be eliminated through diversification.
4

5 **X. CONCLUSION**

6 **Q. Please summarize Staff's recommendations.**

7 A. Staff recommends that the Commission adopt a 9.5 percent overall rate of return ("ROR")
8 for the Company based on a capital structure composed of 0.0 percent debt and 100.0
9 percent equity, Staff's 8.9 percent average DCF cost of equity estimate, and Staff's 60 basis
10 point (0.60 percent) upward economic assessment adjustment.
11

12 **Q. Does this conclude your direct testimony?**

13 A. Yes, it does.

Quail Creek Water Company, Inc. Cost of Capital Calculation
 Capital Structure
 And Weighted Average Cost of Capital
 Staff Recommended and Company Proposed

[A]

[B]

[C]

[D]

<u>Description</u>	<u>Weight (%)</u>	<u>Cost</u>	<u>Weighted Cost</u>
Staff Recommended Capital Structure			
Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	9.5%	<u>9.5%</u>
Weighted Average Cost of Capital			9.5%
Company Proposed Capital Structure			
Debt	0.00%	0.00%	0.00%
Common Equity	100.00%	10.00%	<u>10.00%</u>
Weighted Average Cost of Capital			10.00%
[D] : [B] x [C] Supporting Schedules: JAC-3 and JAC-4.			

Intentionally left blank

Quail Creek Water Company, Inc. Cost of Capital Calculation
 Final Cost of Equity Estimates
 Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
<u>DCF Method</u>				
Constant Growth DCF Estimate		$\frac{D_1}{P_0}^1$	+ g^2	k
Multi-Stage DCF Estimate		2.7%	+ 5.9%	8.6%
Average DCF Estimate			=	<u>9.1%</u>
			=	8.9%
			Staff's Estimated Cost of Equity	8.9%
			Economic Assessment Adjustment	<u>0.6%</u>
			Sub-Total	9.5%
			Financial Risk Adjustment	<u>0.0%</u>
			Total	9.5%

1 MSN Money and Value Line

2 Schedule JAC-8

Quail Creek Water Company, Inc. Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
<u>Company</u>	<u>Debt</u>	<u>Common Equity</u>	<u>Total</u>
American States Water	40.8%	59.2%	100.0%
California Water	47.2%	52.8%	100.0%
Aqua America	52.0%	48.0%	100.0%
Connecticut Water	48.4%	51.6%	100.0%
Middlesex Water	45.9%	54.1%	100.0%
SJW Corp	54.7%	45.3%	100.0%
York Water	<u>44.2%</u>	<u>55.8%</u>	<u>100.0%</u>
 Average Sample Water Utilities	 47.6%	 52.4%	 100.0%
 Quail Creek Water Company	 0.00%	 100.00%	 100.0%

Source:

Sample Water Companies from Value Line

Quail Creek Water Company, Inc. Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
	Dividends Per Share 2004 to 2013	Dividends Per Share Projected	Earnings Per Share 2004 to 2013	Earnings Per Share Projected
<u>Company</u>	<u>DPS¹</u>	<u>DPS¹</u>	<u>EPS¹</u>	<u>EPS¹</u>
American States Water	5.6%	8.6%	15.2%	4.4%
California Water	1.3%	8.2%	4.9%	8.9%
Aqua America	7.6%	9.0%	9.7%	6.0%
Connecticut Water	1.7%	4.1%	3.7%	5.3%
Middlesex Water	1.5%	2.0%	5.4%	3.9%
SJW Corp	4.1%	6.5%	2.1%	8.7%
York Water	<u>4.1%</u>	<u>6.3%</u>	<u>4.8%</u>	<u>8.0%</u>
Average Sample Water Utilities	3.7%	6.4%	6.5%	6.5%

1 Value Line

Quail Creek Water Company, Inc. Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
	Retention Growth 2004 to 2013 <u>br</u>	Retention Growth Projected <u>br</u>	Stock Financing Growth <u>vs</u>	Sustainable Growth 2004 to 2013 <u>br + vs</u>	Sustainable Growth Projected <u>br + vs</u>
<u>Company</u>					
American States Water	4.1%	5.4%	1.8%	6.0%	7.3%
California Water	2.6%	3.5%	3.1%	5.7%	6.6%
Aqua America	4.2%	6.0%	1.8%	6.0%	7.8%
Connecticut Water	2.1%	4.5%	3.2%	5.3%	7.7%
Middlesex Water	1.3%	3.2%	3.2%	4.5%	6.4%
SJW Corp	3.2%	3.3%	1.0%	4.2%	4.3%
York Water	<u>2.2%</u>	<u>4.1%</u>	<u>4.9%</u>	<u>7.1%</u>	<u>8.9%</u>
Average Sample Water Utilities	2.8%	4.3%	2.7%	5.5%	7.0%

[B]: Value Line

[C]: Value Line

[D]: Value Line, MSN Money, and Form 10-Ks filed with the Securities and Exchange Commission (<http://www.sec.gov/>)

[E]: [B]+[D]

[F]: [C]+[D]

Quail Creek Water Company, Inc. Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
		Spot Price		Mkt To	<i>Value Line</i>	Raw
<u>Company</u>	<u>Symbol</u>	<u>4/1/2015</u>	<u>Book Value</u>	<u>Book</u>	<u>Beta</u>	<u>Beta</u>
American States Water	AWR	39.89	13.10	3.0	0.70	0.52
California Water	CWT	24.73	12.54	2.0	0.70	0.52
Aqua America	WTR	26.45	8.81	3.0	0.70	0.52
Connecticut Water	CTWS	37.20	19.70	1.9	0.65	0.45
Middlesex Water	MSEX	23.06	12.27	1.9	0.70	0.52
SJW Corp	SJW	31.42	15.86	2.0	0.85	0.75
York Water	YORW	24.08	8.48	2.8	0.65	0.45
Average				2.4	0.71	0.53

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Quail Creek Water Company, Inc. Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
<u>Description</u>	<u>g</u>
DPS Growth - Historical ¹	3.7%
DPS Growth - Projected ¹	6.4%
EPS Growth - Historical ¹	6.5%
EPS Growth - Projected ¹	6.5%
Sustainable Growth - Historical ²	5.5%
<u>Sustainable Growth - Projected²</u>	<u>7.0%</u>
Average	5.9%

1 Schedule JAC-5

2 Schedule JAC-6

Quail Creek Water Company, Inc. Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
<u>Company</u>	Current Mkt. Price (P_0) ¹ 4/1/2015	Projected Dividends ² (Stage 1 growth) (D_t)				Stage 2 growth ³ (g_n)	Equity Cost Estimate (K) ⁴
		d_1	d_2	d_3	d_4		
American States Water	39.9	0.86	0.91	0.96	1.02	6.5%	8.6%
California Water	24.7	0.69	0.73	0.77	0.82	6.5%	9.2%
Aqua America	26.5	0.65	0.69	0.73	0.78	6.5%	8.9%
Connecticut Water	37.2	1.04	1.10	1.17	1.24	6.5%	9.2%
Middlesex Water	23.1	0.80	0.84	0.89	0.95	6.5%	9.9%
SJW Corp	31.4	0.79	0.84	0.89	0.94	6.5%	9.0%
York Water	24.1	0.60	0.64	0.68	0.72	6.5%	8.9%

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n} \left[\frac{1}{(1+K)} \right]^n$$

Average **9.1%**

Where : P_0 = current stock price
 D_t = dividends expected during stage 1
 K = cost of equity
 n = years of non - constant growth
 D_n = dividend expected in year n
 g_n = constant rate of growth expected after year n

¹ [B] see Schedule JAC-7

² Derived from Value Line Information

³ Average annual growth in GDP 1929 - 2012 in current dollars.

⁴ Internal Rate of Return of Projected Dividends

BEFORE THE ARIZONA CORPORATION COMMISSION

SUSAN BITTER SMITH

Chairman

BOB STUMP

Commissioner

BOB BURNS

Commissioner

DOUG LITTLE

Commissioner

TOM FORESE

Commissioner

IN THE MATTER OF THE APPLICATION OF)
QUAIL CREEK WATER COMPANY, INC. AN)
ARIZONA WATER CORPORATION, FOR A)
DETERMINATION OF THE FAIR VALUE OF)
ITS UTILITY PLANTS AND PROPERTY AND)
FOR INCREASES IN ITS WATER RATES AND)
CHARGES FOR UTILITY SERVICE BASED)
THEREON.)
_____)

DOCKET NO. W-02514A-14-0343

DIRECT

TESTIMONY

OF

MICHAEL S. THOMPSON, P. E.

UTILITIES ENGINEER

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

MAY 6, 2015

TABLE OF CONTENTS

	PAGE
INTRODUCTION	1
PURPOSE OF TESTIMONY.....	3
ENGINEERING REPORT	4
CONCLUSIONS AND RECOMMENDATIONS.....	4

EXHIBITS

Engineering Report for Quail Creek Water Company, Inc.	MST-1
---	-------

INTRODUCTION

Q. Please state your name and business address.

A. My name is Michael Thompson. My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. By whom and in what position are you employed?

A. I am employed by the Arizona Corporation Commission ("Commission" or "ACC") as a Utilities Engineer - Water/Wastewater in the Utilities Division.

Q. How long have you been employed by the Commission?

A. I have been employed by the Commission since June 2013.

Q. What are your responsibilities as a Utilities Engineer - Water/Wastewater?

A. As a Utilities Engineer specializing in water and wastewater engineering, my responsibilities include: the inspection, investigation, and evaluation of water and wastewater systems; obtaining data and preparing investigative reports; providing technical recommendations and suggesting corrective action for water and wastewater systems; and providing written and oral testimony in rate cases and other cases before the Commission.

Q. How many companies have you analyzed for the Utilities Division?

A. I have analyzed 15 companies covering various responsibilities for the Utilities Division Staff ("Utilities Staff" or "Staff").

Q. Have you previously testified before this Commission?

A. Yes, I have testified before this Commission.

1 **Q. What is your educational background?**

2 A. I graduated from the SUNY College of Environmental Science and Forestry ("ESF") at
3 Syracuse, New York, and Syracuse University ("SU") at Syracuse, New York. I have a
4 Bachelor of Science Degree in Pulp and Paper Engineering from ESF and Chemical
5 Engineering from SU.

6
7 **Q. Briefly describe your pertinent work experience.**

8 A. Prior to my employment with the Commission, I was the Operations Engineer, from 2009 to
9 2012, for the Southwest and Central Districts of Golden State Water Company ("GSWC"),
10 located in Gardena and Santa Fe Springs, California, respectively. As the Operations
11 Engineer, I provided technical assistance and support to the districts' operations departments
12 with primary focus on resolving operational problems and optimizing the efficiency of the
13 water system operations. Prior to my employment with GSWC, I was employed with
14 Chaparral City Water Company ("Chaparral"), from 2002 to 2009, as District Operations
15 Engineer. While at Chaparral, I performed all capital, new business, and water quality
16 activities within the district. I served as field engineer/construction manager for all capital
17 and new business projects under construction. I also managed all water quality activities
18 including monitoring, sampling, and reporting as required by 40 CFR (National Primary
19 Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.

20
21 From 2000 to 2002, I was employed with the Fountain Hills Sanitary District as Engineering
22 Assistant. I performed plan review of all commercial and residential projects in the Town of
23 Fountain Hills, and managed the district's construction projects.

24
25 From 1996 to 2000, I was employed as an Environmental Engineering Specialist with the
26 Arizona Department of Environmental Quality ("ADEQ"). During that time period, I

1 performed operations and maintenance site inspections of public water systems in Gila,
2 LaPaz, Mohave, and Southwestern Yavapai counties.

3
4 **Q. Please state your professional membership, registrations, and licenses.**

5 A. I am registered as a Professional Engineer (Civil) in the State of Arizona, a Grade 2 Certified
6 Water Treatment Plant Operator, and a Grade 3 Certified Water Distribution System
7 Operator. I am a member of the American Water Works Association and Arizona Water
8 Association.

9
10 **PURPOSE OF TESTIMONY**

11 **Q. What was your assignment in this rate proceeding?**

12 A. My assignment was to provide Staff's engineering evaluations for the Quail Creek Water
13 Company, Inc. ("Quail Creek" or "Company") rate proceedings.

14
15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. My testimony presents the findings of Staff's engineering evaluation of the operations for the
17 Quail Creek Water System. The findings are contained in the Engineering Report that I have
18 prepared for this proceeding. The report is included as Exhibit MST-1 in this pre-filed
19 testimony.

20

ENGINEERING REPORT

Q. Please describe the information contained in your Engineering Reports.

A. The Report is divided into three (3) general sections: 1) *Executive Summary*, 2) *Engineering Report Discussion*, and 3) *Engineering Report Figures*. The *Discussion* section for the Quail Creek Water System is further divided into nine (9) subsections: 1) *Introduction and Location of the Water System*, 2) *Description of the Water System*, 3) *Water Usage*, 4) *Growth*, 5) *Arizona Department Environmental Quality Compliance*, 6) *Arizona Department of Water Resources Compliance*, 7) *Arizona Corporation Commission Compliance*, 8) *Depreciation Rates*, and 9) *Other Issues*.

Q. Was the Engineering Report prepared by you?

A. Yes.

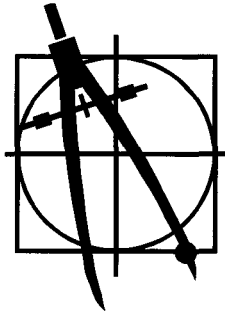
CONCLUSIONS AND RECOMMENDATIONS

Q. What are Staff's conclusions and recommendations regarding the operations of the Quail Creek Water System?

A. Staff's conclusions and recommendations are contained in the Executive Summary of the Engineering Report.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.



**ENGINEERING REPORT FOR
Quail Creek Water Company, Inc.**

Docket No. W-02514A-14-0343 (Rates)

By Michael Thompson, P. E.

April 17, 2015

EXECUTIVE SUMMARY

CONCLUSIONS

1. The Arizona Corporation Commission ("ACC" or "Commission") Utilities Division Staff ("Utilities Staff" or "Staff") concludes that the Quail Creek Water Company, Inc. ("Quail Creek" or "Company") water system has adequate production and storage capacity to serve the present customer base and any reasonable growth.
2. Quail Creek's original Certificate of Convenience & Necessity ("CC&N") was granted in an Order Preliminary in Commission Decision No. 56738, dated December 7, 1989, and permanently granted in Commission Decision No. 59695. CC&N extensions were granted in Commission Decision Nos. 63137 and 67067 on November 16, 2000, and June 25, 2004, respectively. The CC&N currently covers an area totaling approximately 2,761 acres (4.31 square miles).
3. The Quail Creek water system well #16 is inactive. The well is disconnected physically and electrically from the water system. Staff concludes that the inactive well is not used and useful to the water system's provision of service.
4. The Arizona Department of Environmental Quality ("ADEQ") Compliance Status Report ("CSR"), dated November 20, 2014, indicates that the Quail Creek water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and the Arizona Administrative Code, Title 18, Chapter 4.
5. The Quail Creek water system service area is located within the Arizona Department of Water Resources ("ADWR") Tucson Active Management Area ("AMA"), and is enrolled as a regulated tier I municipal provider in the Modified Non-Per Capita Conservation Program ("MNPCCP").
6. ADWR's Water Provider Compliance Report, dated April 14, 2015, indicates that the Quail Creek water system is currently compliant with departmental requirements governing water providers and/or community water systems.

7. According to the Commission's Utilities Division Compliance Section database, Quail Creek currently has no delinquent Commission compliance items.
8. Quail Creek has approved Cross-Connection/Backflow Prevention and Curtailment Tariffs on file with the Commission.
9. Quail Creek does not have any Best Management Practice ("BMP") Tariffs on file with the Commission. However, Quail Creek has implemented, as required by ADWR, a basic public education program plus five (5) additional BMPs.

RECOMMENDATIONS

1. Staff recommends an annual water testing expense of \$7,608 for Quail Creek be used for the purposes of this application.
2. Staff recommends the depreciation rates listed under "Staff's Recommended Rates" in Table E be adopted.
3. Staff recommends the meter and service line installation charges listed under "Staff's Recommendations" in Table F be adopted.
4. Staff recommends that Quail Creek file with Docket Control, as a compliance item in this docket within 90 days of the effective date of a decision in this proceeding, the seven (7) BMPs that were approved by ADWR for implementation by Quail Creek as an MNPCCP participant that substantially conform to the templates created by Staff for the Commission's review and consideration. The templates created by Staff are available on the Commission's website at <http://www.azcc.gov/Divisions/Utilities/forms.asp>.

TABLE OF CONTENTS

	<u>PAGE</u>
A. INTRODUCTION AND LOCATION OF COMPANY	4
B. DESCRIPTION OF THE WATER SYSTEM	4
C. WATER USE.....	6
1. WATER SOLD	6
2. NON-ACCOUNTED FOR WATER.....	6
3. WATER SYSTEM ANALYSIS	7
D. GROWTH	7
E. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY ("ADEQ") COMPLIANCE.....	8
1. COMPLIANCE STATUS.....	8
2. WATER MONITORING AND TESTING EXPENSES	8
F. ARIZONA DEPARTMENT OF WATER RESOURCES ("ADWR") COMPLIANCE	10
G. ARIZONA CORPORATION COMMISSION COMPLIANCE	10
H. DEPRECIATION RATES	11
I. OTHER ISSUES	12
1. SERVICE LINE AND METER INSTALLATION CHARGES	12
2. CURTAILMENT TARIFF.....	13
3. CROSS-CONNECTION/BACKFLOW PREVENTION TARIFF	13
4. BEST MANAGEMENT PRACTICES ("BMP") TARIFF	13

FIGURES

	<u>PAGE</u>
FIGURE 1. PIMA COUNTY MAP	16
FIGURE 2. QUAIL CREEK WATER SYSTEM CERTIFIED AREA.....	17
FIGURE 3. QUAIL CREEK WATER SYSTEM SCHEMATIC DIAGRAM	18
FIGURE 4. QUAIL CREEK WATER CONSUMPTION GRAPH	19
FIGURE 5B. QUAIL CREEK WATER ACTUAL & PROJECTED GROWTH	19

A. INTRODUCTION AND LOCATION OF COMPANY

On September 19, 2014, Quail Creek Water Company, Inc. ("Quail Creek" or "Company") filed an application with the Arizona Corporation Commission ("ACC" or "Commission") for approval of a rate increase in Docket No. W-02514A-14-0343. Quail Creek's current rates were approved in Commission Decision No. 61611 dated April 1, 1999.

Quail Creek is a Class B public utility water company that provides service to approximately 2,011 metered connections.¹ The Quail Creek water system is a groundwater-based system serving master planned communities of Quail Creek and Stone House located in Sahuarita, Arizona. Sahuarita, which is located approximately 15 miles south of Tucson, is shown on Figure 1. The Quail Creek water system Certificate of Convenience and Necessity ("CC&N"), which covers an area totaling approximately 2,761 acres (4.31 square miles), is shown in Figure 2. The original CC&N was granted in an Order Preliminary in Commission Decision No. 56738, dated December 7, 1989, and permanently granted in Commission Decision No. 59695. Two (2) CC&N extensions were granted in Commission Decision Nos. 63137 and 67067 on November 16, 2000, and June 25, 2004, respectively.

B. DESCRIPTION OF THE WATER SYSTEM

The Quail Creek water system was visited on November 25, 2014, by Staff member Michael Thompson. Mr. Thompson was accompanied by Mr. Edward MacMeans and Mr. Ray Jones. Mr. MacMean is responsible for the day-to-day operations of the Quail Creek water system and is also the certified operator of record.²

The Quail Creek water system contains three (3) active drinking water wells, one (1) inactive well, a water plant (Water Plant #1), and 184 fire hydrants. Water Plant #1 contains one (1) 15,000 gallon hydro-pneumatic pressure tank, two (2) 750,000 gallon storage tanks, an emergency back-up generator with an automatic transfer switch, and a booster pump station. The booster pump station consists of three (3) 15 horsepower ("hp") booster pumps, and one (1) 30 hp booster pump. Two (2) of the 15 hp booster pumps operate with Variable Frequency Drives ("VFDs").

The three (3) active drinking water wells pump directly to a looped distribution system which consists of two (2) pressure zones (Zones 2 & 3). The storage tanks, located at Water Plant #1, receive water from the wells via the distribution system. Both storage tanks are interconnected and supply water to the distribution system via gravity feed and the booster pump station. Although interconnected, water is supplied to Zone 2 (lower zone) via gravity feed from the east storage tank, while Zone 3 (upper zone) is supplied water from both storage tanks via the booster pump station. The wells and water plant are normally operated remotely from the Lago Del Oro Saddlebrook

¹ Per water use data submitted with the application.

² Mr. MacMeans is certified with the Arizona Department of Environmental Quality ("ADEQ") as a Grade 4 Water Distribution System Operator, Grade 4 Water Treatment Plant Operator, Grade 4 Wastewater Treatment Plant Operator, and Grade 3 Collection System Operator. Mr. MacMeans's ADEQ Operator Identification No. is OP008401, with an expiration date of August 31, 2015.

office with the utilization of the Supervisory Control and Data Acquisition ("SCADA") system. The emergency backup generator provides emergency power for the booster pump station.

The in-service plant facilities (i.e., wells, tanks, pumps, and visible pipe) appeared to be in proper working order, properly maintained, and in good condition. Staff did not observe any leaks at the plant facilities, or in the distribution system.

The inactive well, Well #16, is disconnected physically and electrically from the water system. The pump and motor have been removed. Staff concludes that the inactive well is not used and useful to the water system's provision of service.

Detailed listings of the plant facilities are included in Table A. A schematic of the service area is illustrated in Figure 3.

Table A. Quail Creek Water System Plant Facilities Summary

Active Wells							
Well ID	ADWR Well ID	Pump (hp)	Pump Yield (gpm) ³	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled
(S) Well #11	55-608597	75	425	459	16	8	1952
(T) Well #12	55-219145	200	1,000	900	18	8	2011
(T) Well #13	55-608522	125	675	2,000	20	8	1974

(S) Signifies Submersible Pump Well

(T) Signifies Turbine Pump Well

Inactive Active Well							
Well ID	ADWR Well ID	Pump (hp)	Pump Yield (gpm)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled
(S) Well #16	55-608598	100	382	510	16	8	1962

Water Plant #1			
Storage Tanks (Gallons)	Pressure Tank (Gallons)	Booster Pump System (hp)	Emergency Back-up Generator w/ Automatic Transfer Switch

³ gpm signifies gallon per minute

East Storage Tank – 750,000 West Storage Tank – 750,000	1 – 13,000	3 – 15 1 - 30	150 Kw
--	------------	------------------	--------

Fire Hydrants	
Quantity	184

Service Area Distribution Mains		
Diameter (inches)	Material	Length (feet)
4	Poly Vinyl Chloride ("PVC")	360
6	PVC	55,002
6	Ductile Iron Pipe	441
8	PVC	53,356
12	PVC	21,087
16	PVC	500
21	PVC	4,225
Total Length		134,971

Service Areas Meters	
Size (inches)	Quantity
5/8 x 3/4	0
3/4	1,848
1	142
1 1/2	4
2	11
4 (Compound)	1
Total Quantity	2,006

C. WATER USE

1. Water Sold

Figure 4 represents the water consumption data for the Quail Creek water system during the test year, January 2013 through December 2013. Customer consumption included a high monthly water usage of 258 gallons per day ("gpd") per connection (1,958 connections) in June, and a low water usage of 176 gpd per connection (1,942 connections) in March. The average daily usage during the twelve-month period was 219 gpd per connection. The Company reported 157,088,000 gallons of water sold during the test year.⁴

2. Non-Accounted For Water

Non-accounted for water should be 10 percent or less and never more than 15 percent. It is important to be able to reconcile the difference between water sold and water produced by the

⁴ Total water sold during the test year is based on the monthly data from the meter reads.

source. A water balance will allow a water company to identify water and revenue losses due to leakage and any non-metered water use such as construction, firefighting, and line flushing.

Quail Creek reported 170,255,000 gallons of water pumped and 157,088,000 gallons of water sold, during the test year ending December, 2013, resulting in a water loss of 7.73%, which is within acceptable limits.

3. *Water System Analysis*

The Quail Creek water system has three (3) active drinking water wells with a total production capacity of approximately 2,100 gpm (3,024,000 gpd). The water system has two (2) storage tanks with a total capacity of approximately 1,530,000 gallons. During the peak month, June 2013, the water system was serving 1,958 connections when Quail Creek reported 15,158,000 gallons of water sold. Average daily demand for the month of June 2013 was determined to be 505,267 gpd, while average daily demand per connection was determined to be 258 gpd. Staff concludes that the Quail Creek water system has adequate production and storage capacity to serve the present customer base and any reasonable growth.

D. GROWTH

Table B and Figure 5 show Quail Creek's customer growth based on service connection data from its past eighteen (18) Annual Reports. Accordingly, Table B and Figure 5 indicate that Quail Creek experienced positive growth from 1997 through 2014. During that period of time Quail Creek gained a total of 2,017 connections, which equates to an average growth of 119 connections per year.

With respect to future growth, Quail Creek is projecting a positive trend in growth from 2015 through 2019. In general, Quail Creek is projecting its growth to increase at a total rate of 24.2 percent (projected gain of 503 customers) from 2015 through 2019.

Table B. Quail Creek Actual and Projected Growth

Year	Number of Customers	Source
1997	61	Annual Report
1998	95	Annual Report
1999	113	Annual Report
2000	196	Annual Report
2001	299	Annual Report
2002	459	Annual Report
2003	667	Annual Report
2004	956	Annual Report
2005	1,307	Annual Report

2006	1,585	Annual Report
2007	1,641	Annual Report
2008	1,705	Annual Report
2009	1,748	Annual Report
2010	1,835	Annual Report
2011	1,872	Annual Report
2012	1,929	Annual Report
2013	1,992	Annual Report
2014	2,078	Annual Report
2015	2,181	Projected
2016	2,281	Projected
2017	2,381	Projected
2018	2,481	Projected
2019	2,581	Projected

E. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (“ADEQ”) COMPLIANCE

1. Compliance Status

ADEQ regulates the Quail Creek water system under ADEQ Public Water System Identification (“PWS ID”) No. 04-10-262. ADEQ inspected the Quail Creek water system on October 23, 2012. During the inspection no major deficiencies were found in the operation, maintenance, or certified operator status of the water system.

According to ADEQ, the Quail Creek water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.⁵ Quail Creek is considered to be in full compliance by ADEQ.

2. Water Monitoring and Testing Expenses

In its Income Statement, line item 19 (Contractual Services – Testing), Quail Creek reported \$12,864 in water testing expenses for the 2013 test year. Upon reviewing the water testing invoices it was determined that approximately \$6,825 of those expenses were actually associated with Robson Ranch Quail Creek Recharge water testing.⁶ Consequently, Quail Creek water testing expenses included in line item 19 (Contractual Services – Testing) during the test year were actually \$6,039, as illustrated in Table C.

⁵ ADEQ CSR’s dated November 20, 2014.

⁶ Robson Ranch Quail Creek Recharge (“RRQCR”) was established to obtain effluent from the Pima County Wastewater Treatment Plant (“PCWTP”) for recharge purposes. RRQCR discharges effluent from the PCWTP into Recharge Perk Basins via an effluent pump station. RRQCR monitors the effluent at the effluent pump station, as well as two (2) monitoring wells. The effluent pump station, perk basins, and monitoring wells are located within the Quail Creek Water Company, Inc. CC&N. The RRQCR is not associated with or owned by Quail Creek Water Company, Inc.

Table C. Company Reported Test Year Water Testing Expenses – Quail Creek Water Company, Inc.

Line Item	Test Year Water Tests	Test Year Expenses	Adjusted Test Year Expenses w/New Source	Adjusted Test Year Expenses w/out New Source
<i>Robson Ranch Quail Creek Recharge Expenses</i> Line Item #19 Contractual Services – Testing	Inorganic Chemicals (IOCs)	\$3,339	\$0	\$0
	Nitrogen 2	\$1,088	\$0	\$0
	Fecal Coliform	\$2,398	\$0	\$0
	Subtotal	\$6,825	\$0	\$0
<i>Quail Creek Expenses</i> Line Item #19 Contractual Services – Testing	New Source Tests	\$4,013	\$4,013	\$0
	Total Coliform	\$976	\$976	\$976
	Disinfection-By-Products (TTHMs)	\$300	\$300	\$300
	Disinfection-By-Products (HAA5s)	\$750	\$750	\$750
	Subtotal	\$12,864	\$6,039	\$2,026
<i>Quail Creek Expenses</i> Line Item #27 Miscellaneous Expense	Monitoring Assistance Program (MAP)	\$5,341	\$5,341	\$5,341
	Total	\$18,205	\$11,380	\$7,367

New source water testing, a one-time expense of \$4,013, was included in the \$6,039 water testing expenses. Although technically considered water testing expenses, new source testing expenses, which in this case were associated with the Well #12 capital project, should more than likely be capitalized. By removing the one-time expense of \$4,013, the actual water testing expenses for the test year were \$2,026.

In addition to Total Coliform, Disinfectant-By-Products, and Lead & Copper testing, the Quail Creek water system is also subject to mandatory participation in the Monitoring Assistance Program (“MAP”).⁷ Test Year MAP expenses of \$5,341 were inadvertently entered in Line Item 27 (Miscellaneous Expense) of the Income Statement instead of Line Item 17 (Contractual Services –

⁷ The MAP is mandatory for water systems which serve less than 10,000 persons (approximately 3,300 service connections).

Testing). As a result, the actual water testing expenses during the 2013 test year were the combined total of \$2,026 and \$5,341 equaling \$7,367, as shown in Table C.

The monitoring and testing expenses that were reviewed, evaluated, and recalculated by Staff are represented in Table D. The total estimated annual water testing expense for the water system is \$7,608. Staff recommends water testing expenses of \$7,608 be used for purposes of this proceeding.

Table D. Staff Recommended Water Monitoring & Testing Expenses – Quail Creek Water Company, Inc.

Water Test	Expense Per Test	Quantity of Tests Per 3 Years	3 Year Expenses	Total Expenses
Total Coliform	\$16	180	\$2,880	\$960
Lead & Copper	\$34	20	\$680	\$227
Disinfection-By-Products (TTHM's)	\$110	9	\$990	\$330
Disinfection-By-Products (HAA5's)	\$250	9	\$2,250	\$750
Subtotal			\$6,800	\$2,267
Monitoring Assistance Program (MAP)	\$5,341	MAP	\$16,023	\$5,341
Total			\$22,823	\$7,608

F. ARIZONA DEPARTMENT OF WATER RESOURCES (“ADWR”) COMPLIANCE

The Quail Creek water system service area is located within the Tucson Active Management Area (“AMA”) and is enrolled as a regulated tier I municipal provider in the Modified Non-Per Capita Conservation Program (“MNPCCP”).

ADWR’s Water Provider Compliance Report dated April 14, 2015, indicates that the Quail Creek water system is currently compliant with departmental requirements governing water providers and/or community water systems.

G. ARIZONA CORPORATION COMMISSION COMPLIANCE

A check of the Utilities Division Compliance Section database showed that there are no delinquent Commission compliance items for Quail Creek.⁸

⁸ Per Compliance Section email dated April 14, 2015.

H. DEPRECIATION RATES

Staff's typical and customary depreciation rates, which vary by National Association of Regulatory Utility Commissioners ("NARUC") plant categories, are illustrated in Table E. These rates represent typical and customary values within a range of anticipated equipment life. Quail Creek's proposed depreciation rates which are shown in the Proposed Rates column in Table E are similar to Staff's typical rates and, therefore, Staff recommends approval of the Company's proposed rates. Staff recommends the depreciation rates listed under "Staff's Recommended Rates" in Table E be adopted.

Table E. Depreciation Rate Table – Quail Creek Water Company, Inc.

NARUC Account Numbers	Depreciable Plant	Quail Creek Proposed Rates (%)	Staff's Typical Rates (%)	Staff Recommended Rates (%)
301	Organization	0.00	0.00	0.00
302	Franchises	0.00	0.00	0.00
303	Land & Land Rights	0.00	0.00	0.00
304	Structures & Improvements	3.33	3.33	3.33
305	Collection & Impounding Reservoirs	2.50	2.50	2.50
306	Lake & River Intakes	2.50	2.50	2.50
307	Wells & Springs – Source & Pumping	3.33	3.33	3.33
308	Infiltration Galleries – Source & Pumping	6.67	6.67	6.67
309	Supply Mains	2.00	2.00	2.00
310	Power Generation Equipment	5.00	5.00	5.00
311	Pumping Equipment - Electric	12.50	12.50	12.50
320	Water Treatment Equipment			
320.1	Water Treatment Equipment –Plant	3.33	3.33	3.33
320.2	Water Treatment Equipment – Solution Feeders	20.00	20.00	20.00
330	Distribution Reservoirs & Standpipes			
330.1	Storage Tanks	2.22	2.22	2.22
330.2	Pressure Tanks	5.00	5.00	5.00
331	Transmission and Distribution Mains	2.00	2.00	2.00
333	Services	3.33	3.33	3.33

334	Meters	8.33	8.33	8.33
335	Hydrants	2.00	2.00	2.00
336	Backflow Prevention Devices	6.67	6.67	6.67
339	Other Plant & Miscellaneous Equipment	6.67	6.67	6.67
340	Office Furniture & Equipment	6.67	6.67	6.67
340.1	Computers & Software	20.00	20.00	20.00
341	Transportation Equipment	20.00	20.00	20.00
342	Stores Equipment	4.00	4.00	4.00
343	Tools, Shop & Garage Equipment	5.00	5.00	5.00
344	Laboratory Equipment	10.00	10.00	10.00
345	Power Operated Equipment	5.00	5.00	5.00
346	Communication Equipment	10.00	10.00	10.00
347	Miscellaneous Equipment	10.00	10.00	10.00
348	Other Tangible Plant	10.00	-----	10.00

I. OTHER ISSUES

1. *Service Line and Meter Installation Charges*

Quail Creek proposed changes to its existing service line and meter installation charges.⁹ The proposed charges are refundable advances and are similar to Staff's typical range of charges for service line and meter installations and, therefore, Staff recommends approval of the Company's proposed charges. Since Quail Creek may at times install meters on existing service lines, it would be appropriate for some customers to only be charged for the meter installation. Those charges are included in Table E listed under "Staff's Recommendations". Staff recommends the charges listed under "Staff's Recommendations" in Table F be adopted.

Table F. Service Line and Meter Installation Charges – Quail Creek Water Company, Inc.

Meter Size	Company Current Tariff	Quail Creek Proposed			Staff's Recommendations		
		Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge
5/8 x 3/4-inch	\$350	\$385	\$135	\$520	\$385	\$135	\$520
3/4-inch	\$400	\$415	\$205	\$620	\$415	\$205	\$620
1-inch	\$470	\$465	\$265	\$730	\$465	\$265	\$730
1-1/2-inch	\$695	\$520	\$475	\$995	\$520	\$475	\$995
2-inch	\$1,225	\$800	\$995	\$1,795	\$800	\$995	\$1,795

⁹ The Company's current charges were approved in Decision No. 61611, effective April 1, 1999.

Turbine							
2-inch Compound	\$1,820	\$800	\$1,840	\$2,640	\$800	\$1,840	\$2,640
3-inch Turbine	\$1,735	\$1,015	\$1,620	\$2,635	\$1,015	\$1,620	\$2,635
3-inch Compound	\$2,410	\$1,135	\$2,495	\$3,630	\$1,135	\$2,495	\$3,630
4-inch Turbine	\$2,700	\$1,430	\$2,570	\$4,000	\$1,430	\$2,570	\$4,000
4-inch compound	\$3,455	\$1,610	\$3,545	\$5,155	\$1,610	\$3,545	\$5,155
6-inch Turbine	\$5,115	\$2,150	\$4,925	\$7,075	\$2,150	\$4,925	\$7,075
9-inch Compound	\$6,650	\$2,270	\$6,820	\$9,090	\$2,270	\$6,820	\$9,090

2. *Curtailment Tariff*

Quail Creek has an approved Curtailment Tariff on file with the Commission. This tariff became effective December 31, 2014.

3. *Cross-Connection/Backflow Prevention Tariff*

Quail Creek has an approved Cross-Connection/Backflow Prevention Tariff on file with the Commission. This tariff became effective November 14, 2014.

4. *Best Management Practices ("BMP") Tariff*

Quail Creek is regulated by ADWR under the MNPCCP and is required to implement a basic public education program plus five (5) additional best management practices ("BMPs").¹⁰ On June 24, 2010, ADWR approved a Public Education Program and five (5) BMPs for Quail Creek. The BMPs approved by ADWR included:

- 1) Customer High Water Use Inquiry Resolution (BMP #3.6)
- 2) Customer High Water Use Notification (BMP #3.7)
- 3) Water Waste Investigations and Information (BMP #3.8)
- 4) Leak Detection Program (BMP #4.1)
- 5) Meter Repair and/or Replacement (BMP #4.2)
- 6) Public Education Program (BMP Template)

¹⁰ Information provided by Ray Jones Direct Testimony, dated September 19, 2015.

Staff recommends that Quail Creek file with Docket Control, as a compliance item in this docket within 90 days of the effective date of a decision in this proceeding, the seven (7) BMPs (six (6) that are listed above that substantially conform to the templates created by Staff for the Commission's review and consideration. The templates created by Staff are available on the Commission's website at <http://www.azcc.gov/Divisions/Utilities/forms.asp>. Quail Creek may request cost recovery of the actual costs associated with the BMPs implemented in its next general rate application.

FIGURES

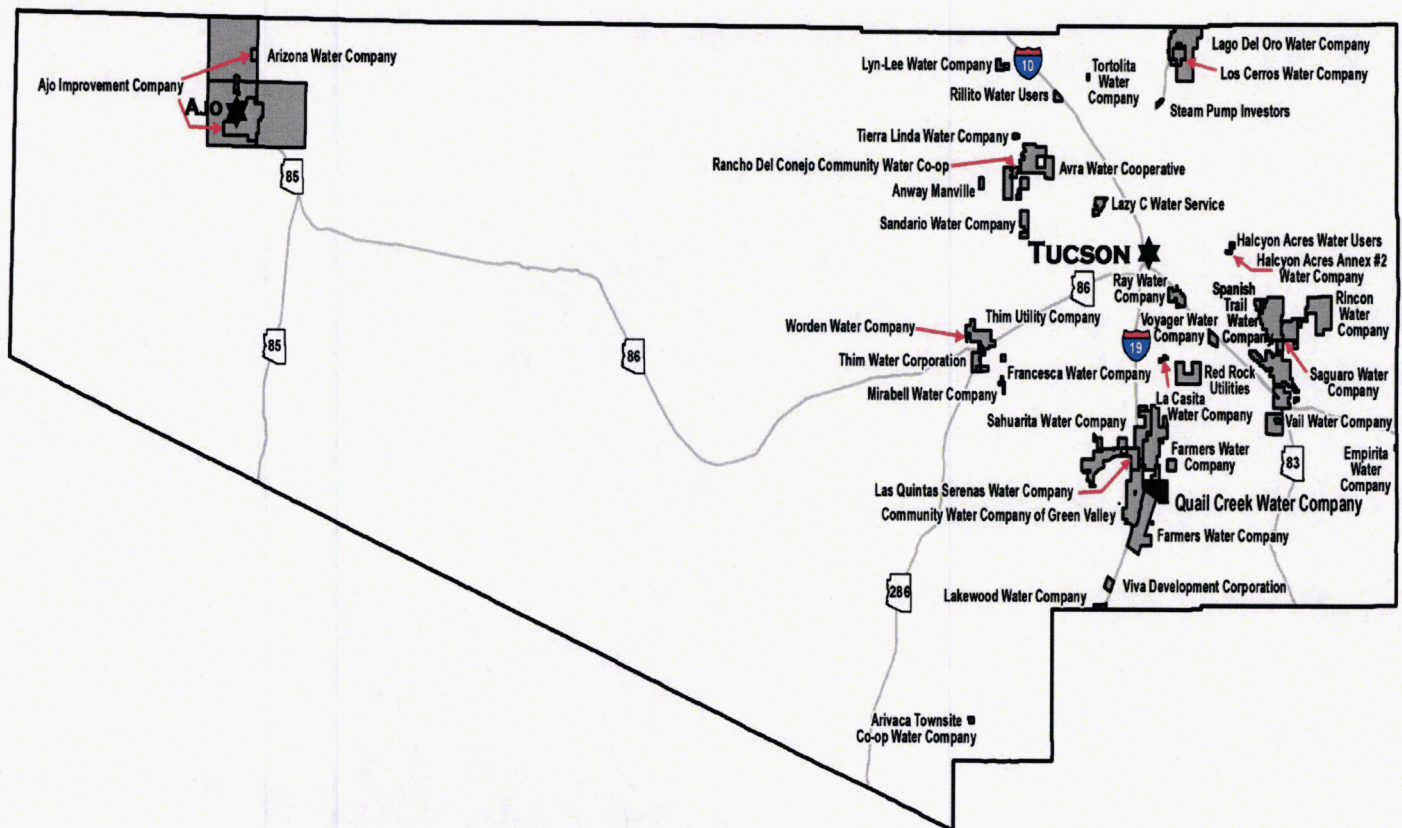


FIGURE 1 – PIMA COUNTY MAP

P I M A C O U N T Y

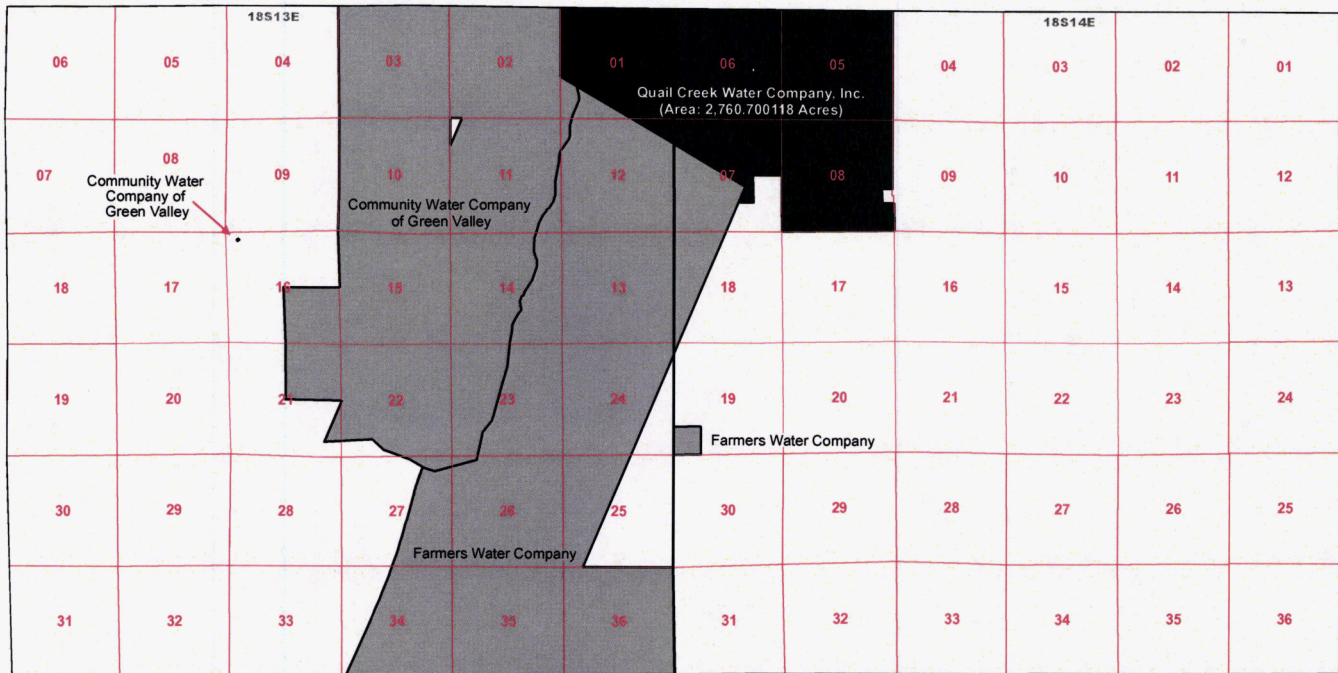


FIGURE 2 – QUAIL CREEK WATER COMPANY CERTIFICATED AREA

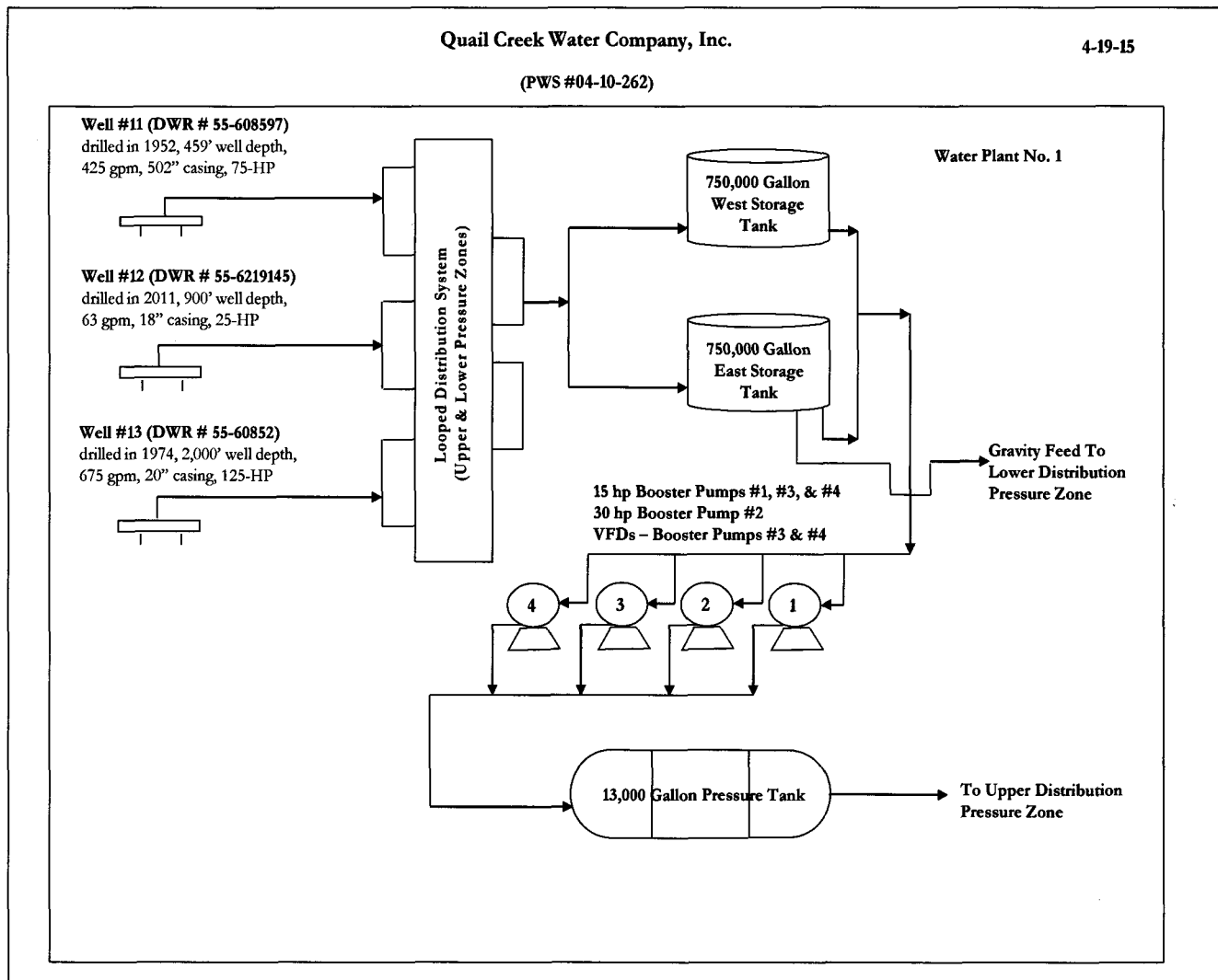


FIGURE 3 – QUAIL CREEK WATER SYSTEM (PWS No. 04-10-262)

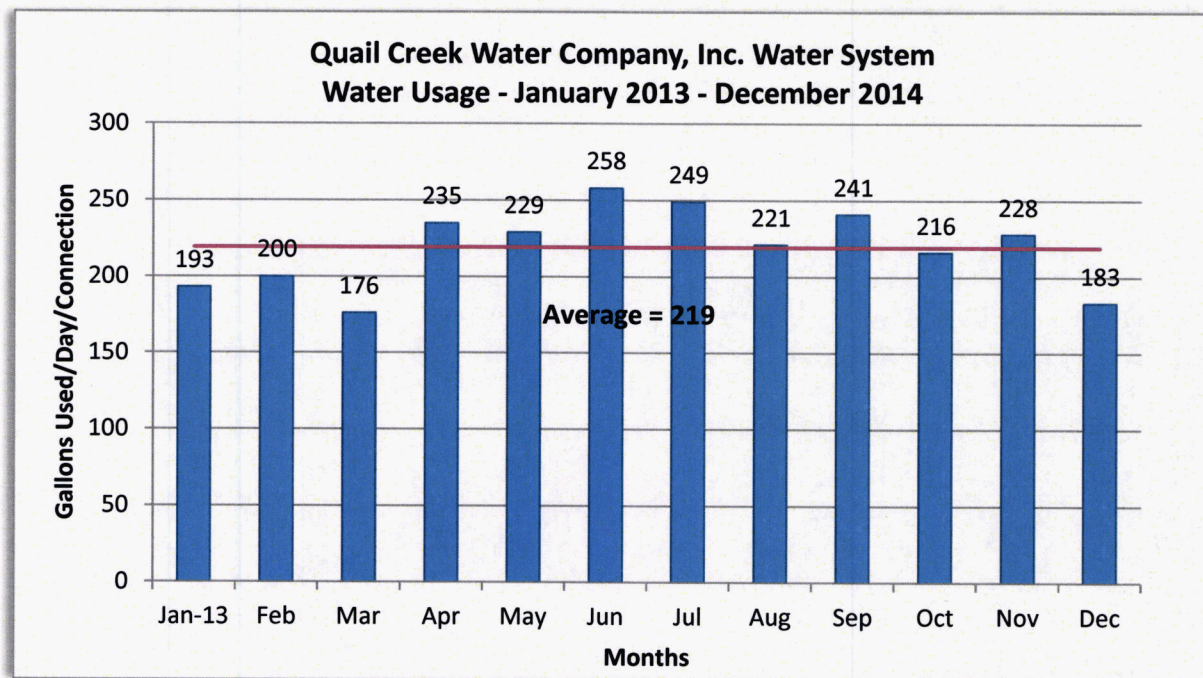


FIGURE 4 – QUAIL CREEK WATER COMPANY, INC. WATER CONSUMPTION

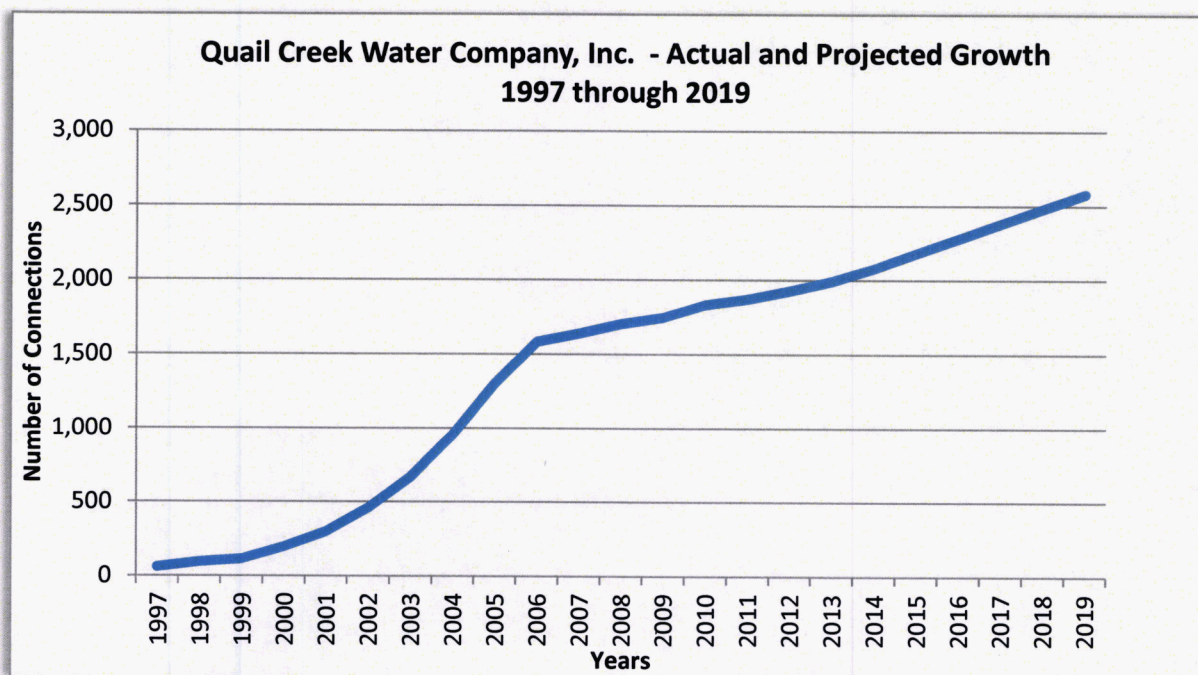


FIGURE 5 – QUAIL CREEK WATER COMPANY, INC. GROWTH